SUŚRUTA SAṂHITĀ

(A Scientific Synopsis)

INDIAN NATIONAL SCIENCE ACADEMY
हयामि भर्गः सवितुर्वरेण्यम्

P. RAY
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FOREWORD

The Indian National Science Academy has had a long-standing interest in the promotion of the study of History of Sciences in India in an effort to promote the growth of natural knowledge including its practical application to the problems of national welfare. William Osler once said "In the continued remembrance of a glorious past, individuals and nations find their noblest aspirations". The history of medicine is both history and medicine and is a part of the history of civilisation. What were the dominant diseases in the ancient past? How did people maintain and promote their health? What were the therapeutic and preventive measures available? In what ways did the socio-economic, religious, philosophical and political factors influence the pattern of health and disease? To these and other questions, we must find reasonable answers so that we may have an understanding of the evolution of concepts of health and disease. Without a proper understanding of the past, there cannot be a proper conception of the present and no perception of the future.

Āyurveda, the science of life, has been one of the areas of exploration by the Indian National Science Academy in its quest for constructing a meaningful history of science in India. The Academy has already produced a volume on *Caraka Saṃhitā* by Prof. Priyadaranjan Ray. Prof. Ray, well into the nineties in age, has performed a *tour-de-force* in producing this scholarly and monumental work on *Suśruta Saṃhitā*. The two works taken together will remain as permanent tributes to the scholarship of Prof. Ray and will at the same time lay a secure foundation on which the history of medical and health science of India can be reconstructed. The body and mind and an equilibrium between the two are a recurring theme of Āyuveda, which, as Prof. Ray says, is as much philosophy as Science. Āyurveda believes that the balance between the mind and the body is crucial for the attainment of self-realisation and salvation. *Suśruta Saṃhitā* is one of the oldest known treatises on medical science and the Academy is glad to be able to produce an authentic version of this classic.

The most fascinating aspect of *Suśruta Saṃhitā*, essentially a surgical text, is how it projects the basic philosophy of Āyurveda as being preservation of health and ensuring a long, happy and useful life. In addition to knowledge dealing with surgical science such as preparations for surgery, various types of surgical instruments, the indications for the use of surgery, etc., the *Saṃhitā* also deals with the teaching of surgical methods by actual demonstration and practical

experiments. It discusses longevity, tastes and their physiological significance, urinary calculi and haemorrhoids and fistulas, care of the expectant mother and postnatal measures for the healthy growth, of the child, prophylactic measures for maintaining health, methods for increasing mental capacity and longevity etc. *Suśruta Saṃhitā* is therefore not merely a treatise on surgical practice. It reflects the whole ethos of Āyurveda and contemporary thinking on the habits, customs aspirations and philosophies of the society at that time. The Academy hopes that the publication of this classic together with the authenticity that it has, provides an important source of information to all those scholars working both in medical sciences and in other forms of human endeavour, to picture the contribution of Āyurveda to the growth and development of thought on health and disease and indeed on human life as a whole, on its purposes, fulfilment and destiny. I have very great pleasure in presenting this volume to the public and in doing so pay my tribute to Prof. Ray for a contribution of great significance to man-kind.

V. Ramalingaswami

New Delhi,
the July 17, 1980.

Director-General,
INDIAN COUNCIL OF MEDICAL RESEARCH
and
President
INDIAN NATIONAL SCIENCE ACADEMY

PREFACE

The present volume on the scientific synopsis of the *Suśruta Saṃhitā* constitutes a companion volume of the previously published work on the *Caraka Saṃhitā* in the History of Sciences in India Publications. As is well known the *Suśruta Saṃhitā* is characterised by wealth of materials relating to medicine and particularly surgery as developed in ancient India. Suśruta, is however, more systematic, concise, logical and precise than other medical texts of that type. It aims at a systematic classification of a large amount of matter avoiding unnecessary details.

The concepts, processes, methods and materials have been collected in the present work following that of its sister volume on the *Caraka Saṃhitā*. The work is divided into two parts. The first part deals with concepts and theories, obstetrics, anatomy and physiology, food and drinks, health and hygiene, diseases and their treatment, pharmacology, classification of plants and animals, and a comprehensive account of surgery. The second part presents most of the salient materials in a tabular form for ready reference and rapid survey as in the case of the previous publication of the *Caraka Saṃhitā*.

In preparing this synopsis we have consulted the following editions, commentaries and translations.

(i) The *Suśruta Saṃhitā,* with the commentary of Dallaṇācārya ; ed. by Jadavji Tricumji Acharya, Bombay, 1915 ; third edition 1938.

(ii) The *Suśruta Saṃhitā* with the commentaries of Ḍallaṇa and Cakrapāṇidatta ; ed. by Vijayaratna Sen and Nisikanta Sen, Calcutta, 1901.

(iii) The *Suśruta Saṃhitā* with the commentary *Nibandhasaṃgraha* by Ḍallaṇa ; ed. by Nripendranath Sengupta and Balai Chandra Sengupta. Pts. I, II, Calcutta, 1938.

(iv) *Nibandhasaṃgraha* by Ḍallaṇa ; ed. by Jivananda Vidyasagara, Calcutta, 1891.

(v) The *Suśruta Saṃhitā*. Translated into English by Kunjalal Bhisagratna, 3 Vols. Chowkhamba Sanskrit Series, 1963.

References in the present work to the chapters and verses in the original text to follow that of the edition by Nripendra Nath Sengupta and Balai Chandra Sengupta.

The following abbreviations have been used in the present work : —
Sū. = *Sūtrasthāna* ; *Ni.* = *Nidānasthāna* ; *Śā* = *Śārīrasthāna* ;
Ci. = *Cikitsāsthāna* ; *Ka.* = *Kalpasthāna* ; *Utt.* = *Uttarasthāna.*

We hope this scientific synopsis of the *Suśruta Saṃhitā* will meet the requirements of foreign scholars interested in ancient Indian medicine and surgery who

may not have the time and opportunity of going through the original Sanskrit text, or its English translations that are available.

We are quite conscious of our imperfections and the possibility of mistakes and errors. We shall be thankful to our readers if they happen to come accross any such, and draw our attention to that. Further, we owe an apology to our readers for this undue delay in the publication of this monograph because of certain circumstances relating to the press over which we had no control.

Our thanks are due to Mrs. Sandhya Mitra, Assistant Editor, Indian National Science Academy, for supervising the technical aspects of publication. Mr. B. N. Chakraborty typed the entire manuscript. Mr. S. K. Ray extended his cooperation in matters concerning publication. Staff members of the library of the Asiatic Society, Calcutta helped in vital stages of the work. We are thankful to all of them. Finally, we acknowledge our appreciations of the keen interest in the work shown by late Dr. D. M. Bose, the former Vice-Chairman, National Commission for the Compilation of History of Sciences in India and Prof. F. C. Auluck, the present Vice-Chairman, National Commission for the Compilation of History of Sciences in India.

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Mira Roy

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I

AIM OF ĀYURVEDA

Āyurveda (Science of Life) aims at ensuring a healthy mind and a healthy body. It is, however, as much a philosophy as a science; and its aim reaches deeper and covers a more extensive field than mere preservation of health and cure of illness.

According to the philosophical concepts on which Āyurveda is based, all bodies—material, living, conscious and unconscious—are evolved out of *prakṛti* (the Ultimate Ground) by the subtle influence of the *puruṣa*, the Absolute, or the Primal Self-conscious Principle (*Śā.* **1**, 78). The living human body is but a manifestation of these factors, and every component of the human organism, including his mind and sense-faculties, is created out of the *tattvas* (fundamental components) as evolved out of the *prakṛti*. In the ideal state of health, the eleven *indriyas* (mind, the five sense organs, and the five organs of motion and action), the three *doṣas* (the counterpart of the three cosmic principles of air, radiant energy, and water), the *agni* (digestive fire), the *malas* (excretions), the *kriyās* (organic functions like sleep, flow of body fluid, elimination, etc.), and the seven *dhātus* (elementary stuffs like body fluids, bones, tissues, etc.), all are in the normal state and in equilibrium. The aim of Āyurveda includes maintenance of this healthy state of balanced equilibrium, and restoration of the same in case of any imbalance and derangement (*Utt.* **64**,2). Such an abnormality or imbalance of the fundamental cosmic forces, inherent in the organism as *sattva* (essence), *rajas* (energy) and *tamas* (inertia), may lead to a derangement of one or more of the three bodily humours. Different types and degrees of humoral imbalance may cause thousands of different illness in different degrees of severity and their combinations (*Utt.* **66**, 6).

Āyurveda attempts to correct these imbalances and derangements and to restore equilibrium conditions by the application of all spiritual and material resources available to man. These, due to their intrinsic cosmic and material components, may be used to augment, reduce, or correct any deficit, excess, or imbalance of the three body humours. At the material level, Āyurveda is concerned with the fundamental causes of illness, the development and function of the human organism, the identification of the different diseases, toxic and pathological conditions, and also the properties, potencies, and physiological actions of the different substances which can be used as correctives by external or internal application. At the mental level, Āyurveda concerns itself with the removal of ignorance of the patient and with the prescription of a course of conduct (*ācāra*) for him, so that the ultimate causes of imbalances are removed as far as possible. It also provides a rational guidance for man, expounding the causes of life and death, health and illness, happiness and misery, and even success or failure in life. But above all, the aim of Āyurveda is the attainment of the ultimate truth or salvation by which the human mind realizes the identity of the individual soul with the Universal Soul (the Supreme Consciousness) and can thus rise above unhappiness, pain, and mortal destruction. The bulk of the text is no doubt concerned with theories and practical methods of physiology, pathology, diagnosis, and treatment. It

is, however, clearly pointed out that these are only the immediate means for the preservation in a perfect state of health of mind and of body, which is of supreme importance for the attainment of self-realization and salvation.

In fine, Āyurveda attempts at a co-ordinated and harmonized three-fold pursuit of happy material existence, proper secular conduct, and spiritual salvation through a correct understanding of the true relationship between man, his world, and the ultimate source of his consciousness and existence.

II

AUTHORSHIP AND DATE OF COMPOSITION OF THE SUŚRUTA SAMHITĀ

The *Suśruta Saṃhitā* is one of the oldest known treatises on medical science and is the earliest known work dealing extensively with surgery. There are two other existing treatises on Āyurveda (the Indian Science of Medicine) which are believed to be chronologically earlier. Of these, the *Bhela Saṃhitā* is a work of definitely inferior merit, and the other, the *Caraka Saṃhitā,* is a work on medicine proper containing a few passages on surgery. The *Atharvaveda,* of a still earlier age (*c.* 1000 B.C.), contains much medical information and can be considered as the earliest known work on medicine; in fact, the *Suśruta Saṃhitā* begins by acknowledging its debt to the *Atharvaveda* (*Sū.* 1, 3). But the unique value of the *Suśruta Saṃhitā* lies in its rational and systematic presentation of medical and surgical knowledge, in the broad scope of the subjects treated, and in the general excellence of its standard.

The extant *Suśruta Saṃhitā* is, according to the testimony of its commentator Ḍallaṇācārya (twelfth century A.D.), a recension by the alchemist Nāgārjuna from an earlier one. The original *Suśruta Saṃhitā* was rather a representation of a series of discourses by the holy sage Dhanvantari to his disciples, Suśruta and others (*Sū* .1, 1). Other compositions dealing with the medical and surgical discourses of the preceptor Dhanvantari are mentioned in the extant edition of the text and in the comparatively recent commentaries of Ḍallaṇācārya and Cakrapāṇidatta. But none of these latter works on medicine and surgery by Aupadhenava, Aurabhra, or Pauṣkalāvata, as mentioned in this text and others (*Sū.* 4, 8), have been traced so far. Only Nāgārjuna's revised version of Suśruta's work remains as evidence of the existence of the high attainment of this ancient Indian Science of Surgery. As far as the existing treatise is concerned, Nāgārjuna may be considered as responsible for considerable additions to the text and for its revision.

The name of Dhanvantari, the so-called creator of the science of surgery and medicine, appears in many passages in the Vedas, the Purāṇas, and the classical Sanskrit literature, where he is regarded as a sage of divine origin. It is therefore impractical, if not impossible, to assign to him a specific historical background or date. As for Suśruta himself, there are a number of references in classical Sanskrit literature about a physician or medical teacher of this name. In the text of the *Suśruta Saṃhitā* (*Utt.* 66, 2), Suśruta is described as the son of Viśvāmitra. In Rājaśekhara's *Bālarāmāyaṇa* and in Bhāvamiśra's *Bhāvasaṃhitā* we find that the sage

Viśvāmitra (the spiritual preceptor of King Rāma, the hero of the epic, *Rāmāyaṇa*) had a son named Suśruta who was sent to the sage Dhanvantari to learn medical science. The other great epic, *Mahābhārata*, also mentions one Suśruta as the son of Viśvāmitra (*Anuśāsana parva* **4**, 14). The *Garuḍa Purāṇa* (**149**, 43) contains a similar reference to Suśruta. But in the absence of an agreed chronology of these works, it only confirms the names of his father and teacher, but furnishes no trustworthy facts regarding his life and time.

Pāṇini, the famous grammarian, uses a derivative of the name Suśruta as an adjective and derives similar adjectives from the names of Agniveśa, Parāśara, Jātukarṇa and other Āyurvedic celebrities. He also enumerates many names of objects, terms, and concepts, special to Āyurvedic works, which have been repeatedly used in the *Suśruta Saṃhitā*. It can therefore be supposed that these Āyurvedic authorities were famous and commonly known in Pāṇini's time. Though the actual time in which Pāṇini lived remains a matter of controversy, he, at least, is a historical personage belonging to an age several centuries before the Christian era. He must have lived much earlier than his commentator Kātyāyana, a contemporary of King Nanda (*c.* 350 B.C.) for, Kātyāyana in his well-known commentary on Pāṇini's grammar (**4**, 192) refers to Suśruta as the author of a treatise bearing the same name (*Suśrutena proktam Sauśrutam*). It will therefore be logical to suppose that Suśruta lived at an earlier period than the scholar Kātyāyana of King Nanda's court.

There is, however, evidence of a more reliable character to indicate that the original *Suśruta Saṃhitā* was composed in a period intermediate between the time of Gautama Buddha (6th century B.C.) and that of Kātyāyana. The text contains a passage which mentions Subhūti Gautama taking part in a discussion about the development of the human foetus in the womb (*Śā.* **3**. 18). Dhanvantari also was one of the debators. On the evidence of the Jātakas and other canonical literature of the Buddhists, Subhūti was one of the direct disciples of Gautama Buddha. The clear reference to Dhanvantari as a contemporary of a personal follower of Gautama Buddha suggests Suśruta, a direct disciple of Dhanvantari, belonged to late sixth century or early fifth century B.C.

Many passages of the *Caraka Saṃhitā* (Dṛḍavala's redaction) and of the *Suśruta Saṃhitā* (Nāgārjuna's redaction) are almost identical. This provides no evidence that the *Caraka Saṃhitā* is an earlier work than the *Suśruta Saṃhitā*, as generally believed.

As to Nāgārjuna, the redactor of the extant *Suśruta Saṃhitā*, there is much controversy about his date. The name of Nāgārjuna as a great alchemist has been mentioned by many authors belonging to different ages. The *Rājataraṅgiṇī* of Kalhaṇa (**1**, 172-173) refers to a great scholar Nāgārjuna, who lived a century and half after Gautama Buddha. Nāgārjuna, the reputed founder of the Mādhyamika school of Buddhist philosophy is a widely known figure of Indian history and literature, and has been placed in the third or fourth century B.C. Hiuen Tsiang, the great Chinese traveller, who lived in India at about 630 A.D. states that Nāgārjuna was a great alchemist and authority on medical science, famous in India for several centuries before his own time.[1]

[1] Watters, T., *On Yuan Chwang's Travels in India*, London, 1905, **2**. pp. 203-206.

I-tsing who also came to India at about 675 A.D., mentions of one Nāgārjuna, who flourished during the time of Aśvaghoṣa (first century A.D.)[2]. Again many centuries later, al-Bīrūnī, the great Arab traveller, describes Nāgārjuna as a great alchemist and medical writer, who lived a century before his time, i.e. in the first half of the ninth century A.D. P.C. Rây mentions in his *History of Hindu Chemistry* that many passages from the *Suśruta Saṃhitā* in its present form were included in medical works, which were translated for the Caliph of Baghdad in the eighth century A.D.[3]

It would seem that apart from Nāgārjuná, the founder of the Mādhyamika school, there were at least three Nāgārjunas in the first millenium A.D., all of them were experts in alchemy and medicine. The redactor of the *Suśruta Saṃhitā* may have been one of them. The practice of adopting the name of a previous authority as a title, or a pseudonym, has been fairly common in the history and literature of India in all ages.

Various dates for Nāgārjuna have been proposed by P.C. Rây[4], Jean Filliozat[5], M. Winternitz[6] and P. Rây[7] on the basis of external and internal evidences. These estimates vary widely. But Nāgārjuna, the reputed author of the well-known alchemical treatises like the *Rasaratnākara*, the *Kakṣapuṭatantra*, the *Ārogyamañjarī*, etc. flourished in the seventh to eighth centuries A.D. It is, therefore, very difficult to determine to which of these Nāgārjunas, the task of the redaction of the *Suśruta Saṃhitā* in its present form might be attributed with any degree of certainty.

The chronology of Suśruta's work has been discussed at length by some recent European and Indian scholars without any unanimity. Apart from a few supposed quotations found in the present text, the original work of Suśruta, as distinct from Nāgārjuna's revised edition is lost to us beyond any hope of possible recovery. There exists no means of knowing what it was like, and whether it was more extensive than what is now available to us. We must remain satisfied with the facts that the present work is the only available version of the *Suśruta Saṃhitā*, and it is a compilation by Nāgārjuna.

The chronology committee of the National Institute of Sciences of India (Proceedings, 1952), was of opinion that third to fourth centuries A.D. may be accepted as the date of the recension of the *Suśruta Saṃhitā* by Nāgārjuna, which formed the basis of Dallaṇa's commentary.

III
SCOPE AND SUBDIVISIONS OF THE SUŚRUTA SAMHITĀ

The *Suśruta Saṃhitā* clearly indicates that the purpose of Āyurveda is not only to cure illness and afflictions, but also to preserve health and ensure a long, happy,

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[2] Takakusu, J., *A Record of the Buddhist Religion as Practised in India and the Malaya Archipelago*, Oxford, 1896, p. 181.
[3] Rây P.C., *History of Hindu Chemistry*, Calcutta, 1902, p. xxix.
[4] *Ibid*, p. xciii.
[5] Filliozat, Jean., *La Doctrine Classique de la Médicine Indienne : ses origines et ses parallels Grecs*, Paris, 1949, pp. 19-23.
[7] Rây, P., *The History of Chemistry in Ancient and Medieval India*, Calcutta, 1956, p. 117.

and useful life. The Āyurveda consists of eight branches (*Sū.* 1, 3-13):

1. *Śalyatantra*—surgery; its various types, and the knowledge necessary for surgical treatment.
2. *Śālākyatantra*—treatment of diseases of the eye, ear, nose, throat, and teeth.
3. *Kāyacikitsā*—treatment of diseases of the body by medicine.
4. *Bhūtavidyā*—psychiatry and psychotherapy.
5. *Kaumārabhṛtya*—pediatrics.
6. *Agadatantra*—toxicology and treatment of poisoning.
7. *Rasāyanatantra*—treatment for longevity and rejuvenation.
8. *Vājīkaraṇatantra*—treatment for increasing virility.

The *Suśruta Saṃhitā,* however, gives surgery the place of honour. Several reasons are given concerning the importance of surgical treatment. Surgery is said to be the most ancient branch of the science of medicine, and capable of effecting immediate cure of diseases amenable to it (*Sū.* 1, 14-15).

The *Suśruta Saṃhitā* contains one hundred and twenty chapters, distributed in five books or divisions.

The first division, *Sūtrasthāna* (fundamental postulates), covers forty-six chapters dealing successively with: (1) the origin of Āyurveda (*vedotpatti*); (2) initiation of a medical student (*śiṣyanaya*); (3) the different branches of medical knowledge (*adhyayanadānika*); (4) rules for interpretation and explanation of the medical texts (*prabhāṣaṇa*); (5) preliminary preparations for surgery (*agraharaṇa*); (6) influence of climate and seasons on health and drugs (*ṛtucaryā*); (7) various types of surgical instruments (*yāntrika*); (8) proper use and care of surgical instruments (*śastrāvacāraṇa*); (9) teaching of surgical methods by actual demonstrations and practical experiments (*yogyā*); (10) duties and code of conduct for intending physicians (*viśikhā*); (11) preparation and properties of alkalis (*kṣārakalpana*); (12) application of cautery (*agnikarma*); (13) leeches and their surgical use (*jalaukākhya*); (14) the origin and properties of blood (*raktavarṇana*) (15) formation and elimination of metabolic products and nature of three bodily humours (*doṣadhātumalādivijñāna*); (16) grafting operations (*karṇavyadha*); (17) distinction between suppurative and non-suppurative swellings (*āmapakvaiṣa*); (18) dressing and bandaging of wounds and ulcers (*ālepa*); (19) nursing of surgical patients (*vraṇyupāsana*); (20) physiological actions of different foods and drinks (*hitāhita*); (21) different types of ulcers (*vraṇapraśna*); (22) opening of abscesses (*vraṇasrāva*); (23) treatment of curable and incurable diseases (*kṛtyākṛtyavidhi*); (24) classification of diseases (*vyādhisamuddeśīya*); (25) different surgical processes (*śastravidhi*); (26) embedded external splinters and internal obstructions (*praṇaṣṭajñānika*); (27) surgical method of removing such splinters and obstructions (*śalyodhṛti*); (28) fatal or unfavourable symptoms in the prognosis of surgical cases (*vraṇajñāna*); (29) favourable and unfavourable signs relating to diseases (*dūtasvapnanidarśana*); (30) hallucinations and sense-perversions in illness (*pañcendriya*); (31 & 32) changes in bodily organs and features, indicating evil portents (*chāyā* and *svabhāvavikṛti*); (33) incurable forms of diseases, their diagnosis and palliatives (*vāraṇa*); (34) medical care in military campaigns (*yuktasenīya*); (35) clinical indications of diseases and for estimation of longevity (*āturakrama*); (36) cul-

tivation, collection, and preservation of medicinal herbs (*bhūmika*); (37) medicinal remedies for boils and ulcers (*miśraka*); (38) classification of drugs (*dravyagaṇa*); (39) cleansing and tranquilizing drugs (*saṃśodhana* and *saṃśamana*); (40) flavours, virtues, potencies, and actions of different drugs (*drvayavijñāna*); (41) characteristics of different drugs (*dravyaviśeṣajñāna*); (42) tastes and their physiological significance (*rasajñāna*); (43) administration of emetics (*vamana*); (44) administration of purgatives (*recana*); (45) properties of different potable substances (*dravadravyavidhi*); (46) properties of different foods and preparations (*annapānavidhi*).

The second division, *Nidānasthāna* (pathology), covers sixteen chapters dealing successively with: (1) diseases of the nervous system (*vātavyādhi*); (2) haemorrhoids (*arśa*); (3) urinary calculi (*aśmarī*); (4) fistulas (*bhagandara*); (5) chronic skin affections (*kuṣṭha*); (6) diseases of the urinary tract (*meha*); (7) abdominal swellings (*udara*); (8) difficult labour and mal-presentation of the foetus (*mūḍha*); (9) abscesses and suppurative swellings (*vidradhi*); (10) inflammatory conditions, sinus, and diseases of the mammary glands (*parisarpaṇa*); (11) glandular swellings (*granthi*); (12) enlargements, scrotal and genital diseases (*vṛddhi*); (13) fractures and dislocations (*bhagna*); (14) genital diseases caused by unnatural practices (*śūka*); (15) minor ailments (*kṣudraroga*); (16) diseases of the oral tract, throat, larynx, etc. and dental diseases (*mukharoga*).

The third division, *Śārīrasthāna* (embryology and anatomy), covers ten chapters dealing with: (1) cosmic origin of life (*bhūtacintā*); (2) eugenics (*rajaḥśuddhi*); (3) pregnancy (*garbhāvakrānti*); (4) foetal development (*garbhavyākaraṇa*); (5) human anatomy (*śarīra*); (6) vital parts of the body and their importance in surgery (*marmanirdeśa*); (7) the vascular system and the transportation of bodily fluids (*śirāvarṇana*); (8) methods of venesection (*śirāvyadha*); (9) arteries, veins, capillaries, nerves, tendons, and ducts in the body (*dhamanīvyākaraṇa*); (10) care of the expectant mother and post-natal measures for healthy growth of the child (*garbhiṇīvyākaraṇa*).

The fourth division, *Cikitsāsthāna* (medical treatment), covers forty chapters dealing successively with: (1) boils and inflammatory swellings (*dvivraṇīya*); (2) sores and traumatic wounds (*sadyovraṇa*); (3) fractures and dislocations (*bhagna*); (4) diseases caused by deranged *vāta* (*vātavyādhi*); (5) major diseases caused by grave derangements of the first humour (*mahāvātavyādhi*); (6) haemorrhoids (*arśa*); (7) urinary calculi (*aśmarī*); (8) fistulas (*bhagandara*); (9) chronic skin diseases (*kuṣṭha*); (10) grave skin affections (*mahākuṣṭha*); (11) urinary diseases (*prameha*); (12) eruptions resulting from urinary disorders (*prameha piḍaka*); (13) diabetes (*madhumeha*); (14) abdominal swelling (*udara*); (15) difficult labour and mal-presentation of the foetus (*mūḍhagarbha*); (16) abscesses and tumours (*vidradhi*); (17) malignant ulcerations (*visarpa*); (18) glandular swellings (*granthi*); (19) scrotal enlargements and genital diseases (*vṛdhi* and *upadaṃśa*); (20) some minor diseases (*kṣudraroga*); (21) diseases of the male organ caused by unnatural practices (*śūkadoṣa*); (22) oral and dental diseases, and diseases of the throat (*mukharoga*); (23) oedema (*śopha*); (24) prophylactic measures for maintaining health (*anāgata bādhapratiṣedha*); (25) diseases of the earlobes, greying hair, and skin blemishes (*miśraka*); (26) methods for increasing virility (*vājīkaraṇa*); (27) prevention of decay and senility (*sarvābādhaśama*); (28) methods for increasing mental capacity and longevity (*medhāyuṣkara*);

(29) restorative and constructive tonics (*svabhāvavyādhivāraṇa rasāyana*); (30) mental and psychological tonics (*nivṛttasantāpa rasāyana*); (31) medicinal uses of fats and oils (*snehopayaugika*); (32) fomentation and diaphoretic treatments (*sveda*); (33) use of purgatives and emetics (*vamana* and *virecana*); (34) misuse of emetics and purgatives (*vamanavirecanavyāpat*); (35) application of enemas and douches (*netravasti*); (36) abuse of enemas and douches (*netravastivyāpat*); (37) special enemas and douches (*uttaravasti*); (38) instruments for applying enemas and douches (*nirūhavasti*); (39) after-care of patients in some treatments (*ātura*); (40) therapeutic applications of fumes, snuffs, and gargles (*dhūmanasyavidhi*).

The fifth division, *Kalpasthāna* (toxicology), covers eight chapters dealing with: (1) poisoning of foods and drinks (*annarakṣā*); (2) vegetable and mineral poisons (*sthāvaraviṣa*); (3) animal poisons (*jaṅgamaviṣa*); (4) snake venoms (*sarpadaṣṭaviṣavijñāna*); (5) treatment in cases of snake bites (*sarpacikitsā*); (6) sonic treatment of poisoning (*dundubhi*); (7) poisoning from bites of rats and animals suffering from rabies (*mūṣikakalpa*); (8) insect poisons and their treatment (*kīṭakalpa*).

The sixth and the last division, *Uttaratantra* (specialized knowledge), is believed to have been added to the original text by redactor Nāgārjuna. It contains revisions of, and addenda to, matters previously dealt with, and also treats of subjects not discussed in the earlier divisions. It covers no less than sixty-six chapters some of them quite short, dealing with: (1) eye and eye diseases (*aupadravika*); (2-7) pathology and classification of various eye diseases (*cakṣurogavijñānīya*); (8-19) treatment of eye diseases, affections, and injuries (*cakṣurogapratiṣedha*); (20-21) diseases of the ear (*karṇagataroga*); (22-23) diseases of the nasal passage (*nāsāgataroga*); (24) catarrhal conditions (*pratiśyāyapratiṣedha*): (25-26) diseases of the head (*śiroroga*); (27-37) evil effects of malignant psychic influences and their remedies (*navagrahākṛtivijñāna*); (38) diseases of the female organ(*yonivyāpatpratiṣedha*); (39) various kinds of fever (*jvarapratiṣedha*); (40) gastro-intestinal maladies (*atīsārapratiṣedha*); (41) consumptive diseases (*śoṣapratiṣedha*); (42) malignant internal tumours and accumulations (*gulmapratiṣedha*); (43) heart diseases (*hṛdrogapratiṣedha*); (44) types of jaundices (*pāṇḍurogapratiṣedha*); (45) haemorrhage (*raktapittapratiṣedha*); (46) epileptic and other fits (*mūrchāpratiṣedha*); (47) chronic alcoholism (*pānātyayapratiṣedha*); (48) abnormal thirst (*tṛṣṇāpratiṣedha*); (49) nausea and vomiting (*chardipratiṣedha*); (50) hiccup (*hikkāpratiṣedha*); (51) asthma (*śvāsapratiṣedha*); (52) coughs (*kāsapratiṣedha*); (53) hoarseness and loss of voice (*svarabhedapratiṣedha*) (54) intestinal and other parasitic worms (*krimirogapratiṣedha*) (55) acute accumulation of fluids in the stomach and lower abdomen (*udāvartapratiṣedha*); (56) acute gastro-intestinal irritations (*visūcikāpratiṣedha*); (57) dyspepsia (*arocakapratiṣedha*); (58) uraemia (*mūtrāghātapratiṣedha*); (59) strangury (*mūtrakṛcchrapratiṣedha*); (60) psychic disorders through evil influences (*amānuṣopasargapratiṣedha*); (61) loss of sensory perceptions and functions (*apasmārapratiṣedha*); (62) insanity (*unmādapratiṣedha*); (63) the different tastes (*rasabhedavikalpa*); (64) hygienic rules and prophylactics (*svasthavṛtti*); (65) semantic significance of certain terms used in Āyurveda (*tantrayukti*); (66) relation of different diseases to the three humours (*doṣabhedavikalpa*).

IV

CONCEPTS AND THEORIES

A. Āyurveda in Relation to Cosmic Evolution

The *Suśruta Saṃhitā* formulates a theory of the cosmic evolution which is a close parallel to that of the *Sāṃkhya* (*Śā.*1.)

The manifested world is derived from the unmanifested, self-existent, Ultimate Ground, *prakṛti* (*avyakta*), which is conceived as formless and undifferentiated (*aliṅga*), limitless (*ananta*), ubiquitous (*sarvagata*), indestructible and undecaying (*nitya*), without beginning (*anādi*) and without end, inert (*acetana*), and unattached (*amadhyastha*). It is characterized by three-fold moments in equilibrium, three *guṇas*: *sattva* (Essence, the medium for the reflection of intelligence), *rajas* (Energy, that which is efficient in a phenomenon and is characterized by a tendency to do work or overcome resistance), and *tamas* (Mass or inertia, which counteracts the tendency of *rajas* to do work, and of *sattva* towards conscious manifestation).

Puruṣa like *prakṛti* is the self-existent, formless and undifferentiated, limitless and ubiquitous, indestructible and undecaying, without beginning and without end, but a conscious (*cetanā*) and active participator (*madhyastha*), and devoid of three *guṇas*.

The process of creation is initiated in the *prakṛti* by the transcendental influence of *puruṣa*, which puts an end of the arrest of the equilibrium of three *guṇas* in *prakṛti*.

From *prakṛti* is successively evolved *mahat* (the intelligible essence of cosmos), from *mahat*, *ahaṃkāra* (individuated cosmic stuff) which is divided into three series—*vaikārika* (*sāttvika*), *taijasika* (*rājasika*), and *bhūtādi* (*tāmasika*). From *vaikārika ahaṃkāra* under the influence of *taijasika* evolved mind, sensory and motor stuffs (*ekādaśa indriya*); from *bhūtādi ahaṃkāra* under the influence of *taijasika* evolved the five *tanmātras* of *sūkṣmabhūtas* (individuated matter stuff or subtle material potencies), and from the five *tanmātras* evolved the five *mahābhūtas* (determinate matter stuff—atomic and molecular constituents of gross matter).

The efficient cause (*nimitta kāraṇa*) of creation, apart from the material cause (*upādāna kāraṇa*) discussed above, consists of the following six: *svabhāva* (inherent characteristics of whatever exists), *īśvara* (creator), *kāla* (eternal cycle of time), *yaddṛcchā* (phenomena willed into existence), *niyati* (destiny), and *pariṇāma* (change).

Suśruta conceives of *puruṣa* as being infinite in number and all-pervading (*sarvagata kṣetrajña*). When inside a body, they are known as *karmapuruṣas* (*asarvagata kṣetrajña*—individuated *puruṣa*). Due to residual deeds (*karma*) in previous births, the *karmapuruṣas* appear in the various plains of divine, human, and animal existence from the moment of conception (*Śā.* 1, 1-17).

Thus every living being may be represented as a *karmapuruṣa* in union with mind, sense organs, and material body. Āyurveda is concerned only with living bodies.

The materials (*dravya*), which form food and drugs, being compound of the five *mahābhūtas*, are also transformations of the *prakṛti*, partaking of the character of its reals (*guṇas*) and component factors (*tattvas*). The science of life, which has the living creature as its object, is also concerned with knowledge of these *guṇas* and *tattvas* (*Śā.* **1**, 12-14).

All living beings have the common attributes of desire for pleasure, aversion to pain or misery, activity, respiration, evacuation, blinking of eyelids, intelligence, mind, will, logical faculty (*vicāraṇa*), memory, knowledge gained from experience (*vijñāna*), ability, and perception. But they also differ in characteristics according to the preponderance of any of the three *guṇas—sattva, rajas* and *tamas*, inherent in them. Individuals with a preponderance of *sattvaguṇa* (i.e. *sāttvika* persons) are endowed with compassion, self-control, forbearance, devotion to truth, proper conduct, faith in God, knowledge gained from self-realization (*jñāna*), intelligence, memory, resolution, comprehension, and non-attachment. Individuals with a preponderance of *rajoguṇa* (i.e. *rājasika* persons) are sensitive to pain, and have restless mind, lack of true understanding, egoism, lack of honesty, lack of compassion, false pride, over-confidence in themselves, buoyancy of spirit, strong desires, and anger. Individuals with a preponderance of *tamoguṇa* (i.e. *tāmasika* persons) are characterized by despondency, agnosticism and atheism, tendency to evil conduct (*adharma*), dull intellect, lack of knowledge and insight, perverted mind, physical and mental inertia, and somnolence (*Śā.* **11**;, 18, 19).

Of the three types of human personalities, *sāttvika* (sanguine), *rājasika* (energetic), and *tāmasika* (lethargic), the first is capable of enduring all degrees of hardship and pain with the help of their will-power; the second type may be made to submit to pain and unpleasant medical treatment by persuasion and by logic of necessity; the last type is horrified even at the prospect of bodily pain.

Apart from attributes derived from the three *guṇas*, the distinctive qualities of the five gross elements are also present in living creatures. *Ākāśa* (space or ether) is constituted mainly of the *sattva* principle and is responsible for sound, sense of hearing, porosity, bodily cavities, and functional subdivisions of the blood vessels and sinews into minute capillaries, etc. *Vāyu* (gaseous principle or air) is constituted mainly of the *rajas* principle and is responsible for the phenomenon of touch, the tactile sense, all types of physical and physiological activities, pulsations of the body, and the sense of lightness. *Tejas* (fire or heat) is constituted mainly of the *sattva* and *rajas* principles, and is responsible for visibility of objects, sense of sight, colour, continuity (*santāna*), digestion, anger, instantaneous response (*taikṣṇa*), and courage (*śaurya*). *Apàs* (liquid or water) is composed mainly of the *sattva* and *tamas* principles, and is responsible for the sense of taste, fluidity, weight, coldness, unctuousness, and formation of semen. *Pṛthvī* (earth or solid) is constituted mainly of the *tamas* principle, and is responsible for the sense of smell, solidity, and weight (*Sū.* **42** 2; *Śā.* **1**, 20, 21).

B. Embryonic Conception; Body, Life, and Soul; Rules of Genetics

In an earlier chapter, it has been said that the Supreme Self-conscious Principle (*puruṣa*) is infinite in number and incapable of evolutionary transformations (*Śā.* **1**.

10). Each of these is a disembodied soul (*kṣetrajña*)—eternal, indestructible, and capable of penetrating anywhere in space. A living creature arises from the association of a material body with such a *kṣetrajña*. The death of an individual being occurs when the *karmapuruṣa* leaves the material body (*Śā.* **1**, 16-17).

When a *kṣetrajña*, by its own volition, enters into the complex of sperm and ovum, it immediately endows the impregnated material with its own attributes of consciousness, sense-perception, creative faculty, faculty of movement, faculty of observation, faculty of self-subsistence, and faculty of self-expression. Though unchangeable in essence, yet the *karmapuruṣa* (individuated *puruṣa*) may appear as changeable under the vicissitudes of mortal life, originating in the *karma* of previous births. The *karmapuruṣa* may impart the three fundamental *guṇas* in varying proportions to the living being, which thus becomes noble or base in character, but its real character is inconceivable and beyond comprehension. Thus life commences at the moment when the material particle of the zygote is endowed with the attributes of the *karmapuruṣa*. This is then propelled by *vāyu* into the uterus and takes up its abode there (*Śā.* **3**, 3).

Suśruta makes it clear that the process of fertilization of ovum by sperm as a result of sexual mating is an essential feature of conception, but it is not sufficient for the creation of life; the intervention of a superior agent is necessary (*Śā.* **3**, 3). Hence, the creation of human life is not possible by the mere will of man. The factors, subject to human control, are therefore the selection of the parents, the act of mating, and the nurture of the foetus within the mother's womb, prior to actual birth. On the basis of this very rational deduction, Suśruta formulates some important principles of human genetics, based on the application of scientific knowledge and practice with the purpose of improving the factors under human control (*Śā.* **2**, 39-42). He draws an apt analogy between the plant and human being. Just as the growth of the best possible specimens of any particular species of plant requires the ideal *ṛtu* (season of sowing), *kṣetra* (soil), *bīja* (seed), and *ambu* (nutrient fluids in the soil and the environment), so the birth of the best type of human being occurs by the co-ordination of the ideal conditions, relating to *ṛtu* (particular date of mating during the menstrual phase), *kṣetra* (womb), *bīja* (parental seeds), and *ambu* (nutritive fluids from the mother's body). Observance of proper directions for mating and of proper care of the mother during the period of gestation are as much necessary as in the case of sowing the seed and in the case of the soil during the germinating period. A child, destined to be handsome, vigorous, long-lived, generous, virtuous, dutiful, and responsible in his conduct, is likely to be born, if the best factors are available during its birth (*Śā.* **2**, 33).

The prospective parents should be adult men and women endowed with perfectly healthy semen and menstrual flow respectively. The appearance and characteristics of such healthy semen and menstrual flow are described in the text. If these are not up to the proper standards, or are vitiated by deranged humours, or by defective blood, normal conditions should be first restored by medical treatment. This is described for all possible types of derangements (*Śā.* **2**, 5-18). Certain defects of the sperm and of the menstrual flow are considered beyond remedy. Persons suffering from such defects are declared unfit for procreation (*Śā.* **2**. 2, 4).

Defects and abnormalities in the future child can be caused not only by defects of the parental *bīja* (sperm and ovum), but also by improper postures and practices during the act of mating. It is stated that this act is the cause of activating the female secretion (*ārtava*). Abnormal behaviours and unnatural postures during sexual intercourse are described in the text, and it is stated that each of them might cause specific congenital defects and sexual aberrations in the future child, even when the parental seeds are healthy (*Śā*. **2**, 36-43).

Suśruta also gives certain rules for observance by the parents to ensure the birth of a desirable child. A period of continence for both the parents is advised before mating. This period should be a month if a male issue is desired. During menstrual period just previous to the act of mating, the woman should strictly follow certain rules of behaviour. She should remain separated from her husband, and avoid day-sleep, neither bathe, nor shed tears, nor use cosmetics on her person, nor comb her hair, nor do any work or task involving hard exercise or fatigue, nor indulge in loud talk or laughter, and nor expose herself to strong winds or to heat. Each of these practices is supposed to result in a particular harmful effect (listed in the text) on the child to be conceived after the termination of the menstrual flow. During this period, she should remain on a special diet free from animal flesh and from stimulants, and avoid even the sight of grown up male persons (*Śā*. **2**, 24-25).

Suśruta specifies that the best time of conception extends from the fourth to the twelfth day, counting from the date of the menstrual flow, the subsequent days being unsuitable for the birth of a desirable child. It is stated that sexual union on even days (i.e. the fourth, sixth, eigth, tenth, and twelfth days counted as above) leads to the procreation of a male child, and on odd days (i.e. the fifth, seventh, ninth and eleventh days) to a female child (*Śā*. **2**, 28-29). The above directions, whatever they are actually worth, seem to suggest a method of determining or controlling the sex of the child to be born. It is also stated that the conception of a male child occurs when the sperm is stronger than the ovum; the reverse holds for a female child. When the sperm and ovum are exactly matched in potency, a rather rare occasion, a hermaphrodite is conceived (*Śā*. **3**, 4-5). It is also noted that the chances of a conception taking place are more favourable if three or four drops of the juice of *lakṣmaṇā* (*Atropa mandragora*), *sahadevā* (a variety of *Sida cordifolia* with yellow flower), *vaṭaśuṅgā* (a variety of *Coleus ambonicus*), or *viśvadevā* (*Uraria lagopodiodes*) mixed with milk is administered into the nostrils of the woman immediately after intercourse (*Śā*. **2**, 32).

Though Suśruta strictly forbids any physical intimacy with the opposite sex during the first three days of the period of menstruation, he admits the possibility of conception occurring during this period, though any child born of such a union can only be extremely short-lived. Similarly, he does not rule out the possibility of conception after the twelfth day, but strongly advises against it on eugenic grounds (*Śā*. **2**, 31).

The bodily and mental characteristics of the future child, whether manifest, or latent—waiting future development, are supposed to be pre-determined. The character of the hair (on the head, face, or body), bones, nails, teeth, veins, arteries, nerves,

tendons, semen, and all other stable and firm components of the body are derived from the male parent; that of the muscles. blood, fat, bone-marrow, heart, umbilicus, liver, spleen, intestines, rectal parts, sex organs, and all other soft components from the female parent; bodily strength, complexion, shape, robustness, or delicacy of build, etc. from the nutrient fluids in the mother's body; the faculty of sense-perceptions, wisdom and knowledge, the capacity for enjoying pleasure or suffering pain, and longevity from the *karmapuruṣa;* valour, health, constitution, brightness of complexion, and intellect from the physiological and spiritual harmony of the parents (*Śā.*3, 19).

C. The Three Humours and the Humoral Theory

Basic Principles

Though the major contribution of the *Suśruta Saṃhitā* consists in the unique presentation of theoretical and practical knowledge of surgery, the physiological and pathological theories found in the work are of no less importance. The humoral theory of the Āyurveda, treated in this work in great detail and depth, deals with the three major subject matters of medical science, namely, physiology, pathology, and treatment, as three different aspects of the same phenomenon. A proper assessment of the value of the Āyurvedic system of medicine in all its aspects is largely dependent upon an understanding of the significance and nature of the three humours—*vāyu, pitta,* and *kapha,* which are supposed to be present in all living creatures including man, and to activate and govern the entire biological process from conception to death. The convention of interpreting the terms—*vāyu, pitta,* and *kapha,* as air, bile, and phlegm, does not correctly represent Suśruta's view on the subject, which is summarized below.

The three fundamental *guṇas* (*sattva, rajas,* and *tamas*) are but the manifestations of the all-pervading Ultimate Ground, *prakṛti.* All varieties of the tangible and intangible phenomena of creation owe their origin to these fundamental *guṇas.* Similarly, all changes in the bodily processes are variations and manifestations of the three universal and all-pervading humours (*tridhātu*) in the body. Hence, all abnormalities and maladies are but manifestations of the imbalance of the three humours, but the cause-and-effect relationship that exists between diseases and the humours is casual and not perpetual. This relationship is neither separable nor inseparable (*Sū.* **24**, 8).

The simultaneous presence of all the three humours is essential for the existence of the living body. These three; helped by a fourth principle, blood, make possible the creation, preservation, and finally the dissolution or death of the living organism; every part of it is permeated by the properties of these four fundamental constituents from birth to death. The healthy functioning of the organism depends upon these four remaining in the normal states, while malfunctioning or disease or death arises from their abnormal or deranged states (*Sū.* **21**, 2-3).

Characteristics of the Three Humours

Vāyu is self-begotten, eternal, all-pervading, and all-powerful in its action and control over all space, and all things whether mobile or immobile. It controls the

creation, growth, and disintegration of all living creatures. Though invisible, it manifests itself by its effect. It is characterized by the properties of dryness, coldness, lightness, desiccating action (*khara*), angular motion (*tiryakga*), sound, touch, energy (*rajas*), inconceivable power (*acintyavīrya*), and perpetual speed (*muhuścārī*). It is this *vāyu* which courses through the body where it moves in constant currents with high speed. In its deranged condition it is the principal *doṣa* (deranged humour) and serves as the most powerful factor in causing diseases. But in its undisturbed state it maintains a desirable equilibrium between the *doṣa* (humours), *dhātus* (physiological elements), and *agni* (heat) present in the body. Hence the body-processes can proceed normally, only when the *vāyu* is in an undisturbed state. According to location and functions, the *vāyu* in the body is of five kinds, as described below.

The *prāṇa vāyu* courses through the oral and nasal cavities. Its functions are to sustain the body, transmit food into the internal organs, and to maintain the vital breath. Its special physiological action is pulsation (*praspandana*).

The *udāna vāyu* is the most important of the five *vāyus*. It courses upwards from the internal cavities. All vocal sounds, including speech and song, depend upon it. Its special physiological function is buoyancy (*udvāhana*).

The *samāna vāyu* courses through the digestive organs. In combination with *agni*, it causes digestion, and excretion of unwanted food from the digestive organs. Its special physiological function is to help metabolism (*viveka*).

The *vyāna vāyu* is not localized. It permeates through the whole body. Its functions are to move the *rasa* (chyle) and blood through the body, to cause perspiration, and to originate the five types of movement: expansion, contraction, and upward, downward and angular motions. Its special physiological function is to fill up the void (*pūraṇa*).

The *apāna vāyu* courses through the lower bowels. It causes the downward movement of foetus, stool, urine, semen, and menses. Its special physiological functions are retention and restraint (*dhāraṇa*) (*Sū*. **15**, 3: *Ni*. **1**, 1-12).

These functions correspond to the functions of cerebro-spinal and sympathetic nerves of modern physiology.

Pitta is a manifestation of the fiery principle (*tejas*) in the living organism. According to location and function, the *pitta* in the body is of five kinds.

Rañjaka pitta, also termed *rañjakāgni* (colour-producing fire), is located in the liver and spleen, and has the function of forming pigments and colours in the body (*rāgakṛt*). The characteristic pigments, found in *rasa* (lymphatic fluid) and its metabolic products, owe their origin to it.

Pācaka pitta, also termed *pācakāgni* (digestive fire), is located in the region of stomach and intestines, and has the function of bringing about digestion and metabolism (*pākakṛt*). It also creates heat inside the body.

Sādhaka pitta, also termed *sādhakāgni* (motion-giving fire), is located in the heart and has the function of vitalizing, or giving energy to the system (*ojakṛt*). It causes voluntary motion and also movement of fluids to, and from, the heart.

Alocaka pitta, also termed *alocakāgni* (vision-giving fire), is located in the pupils of the eyes and is responsible for the perception of light, heat, and energy (*tejakṛt*). It imparts vision.

Bhrājaka pitta, also termed *bhrājakāgni* (lustre-giving fire), is located in the skin and has the function of heating and maintaining the temperature of the body (*uṣmakṛt*). It imparts the power of absorption to the surface of the body and preserves the gloss and brightness of the skin.

All types of *pitta* contribute to the preservation of the body by *agnikarma* (metabolic combustion) (*Sū.* **15.** 4; **21,** 9-15).

These functions correspond to the functions of the main organs of the body.

Śleṣman is a manifestation of the cosmic principle (*apas*) of placid and cooling characteristics in the living organism. According to location and function the *śleṣman* is of five kinds.

Kledaka (making slimy) *śleṣman* is principally located in the stomach, but its liquid essence permeates all other parts of the alimentary canal. Its function is to supply mucous substances to the system.

Avalambaka (agent for motive power) *śleṣman,* located in the region of the chest, enables the joints of the arms, neck, backbone, and heart to perform their proper work by its own potency and by supplying *rasa* derived from the assimilated food. Its function is to transport the body fluids to their proper places and thus to cause the growth of the body (*pūraṇa*).

Vodhaka (agent for taste) *śleṣman,* located in the throat and the uvular region, imparts the power of taste-perception by maintaining the humid character of the tongue. It also helps in the formation of fresh healthy tissues in sores and affected parts (*ropaṇa*).

Tarpaka (flushing or irrigating agent) *śleṣman,* located inside the head, bathes the sense organs with necessary fluids and imparts sensations to the body (*tarpaṇa*).

Śleṣmaka (binding agent) *śleṣman,* located in the joints, serves to bind them together (*sandhisaṃśleṣaṇa*).

All varieties of *śleṣman* are strengthening (*balakṛt*), promote bodily endurance (*sthairyakṛt*), and contribute to the proper healthy functioning of the body (*Sū.* **15,** 5; **21,** 16-22).

These functions correspond to the functions of the lymphatic tissue systems of the body in modern physiology.

Humoral Pathology

Diseases are caused by derangement of one or more of the three humours, *vāta, pitta* and *kapha,* and of blood. Bodily humours can be increased or decreased in quantity and also aggravated or pacified under the influence of nature and quantity of food, abnormal or normal conduct, incongenial or congenial environ-

ment, and unfavourable or favourable natural phenomena. By the term natural phenomena (*kālakṛt*), Suśruta includes storms (*pravāta*), winds (*nivāta*), sunlight (*ātapa*), shade (*chāyā*), moonlight (*jyotsnā*), darkness (*tama*), cold (*śīta*), heat (*uṣṇa*), alteration of night and day (*ahorātra*), lunation (*pakṣa*), succession of the months (*māsa*), and succession of the seasons (*ayana*) (*Sū.* **1**, 24-25).

The proper course of all types of *vāyu* can be impeded by suppresion of natural urges and by wrong habits, accidents, seasonal factors, and faulty diet. *Vāyu,* lodged in wrong places, becomes increasingly more deranged and in its turn vitiates the blood. In this condition it causes the malady, known as *vātarakta* (a type of acute rheumatism) with grave symptoms. The impeded *vāyu* can cause many other maladies either by itself or in conjunction with other deranged humours. A list of such maladies is found in the table (Table No. VII).

Deranged *pitta* or *kapha* can also vitiate the blood and cause the severe maladies, known as *pittarakta* (plethora) or *kapharakta* (pulmonary diseases). When all three deranged humours vitiate the blood, *sannipātarakta* (enteric fever or typhoid) results, in which all the grave symptoms of the three previous maladies may occur together (*Ni.* **1**, 13-43).

Effect of Climate and Other Environmental Factors and Body Humours

Effect of climate: In the rainy season, the air is humid, the land is covered with decayed matter, the water is muddy, and the newly-grown cereals and herbs are of low potency. These conditions give rise to excessive secretion of *pitta* in the body. In early autumn, the sun dries up everything, and the bile is coagulated in the system, giving rise to disorders of *pitta.*

In late autumn, the sun is mild, the wind is moist, the water is clear and cool, and the herbs are mature. These emollient, cool, and heavy qualities in the environment give rise to an accumulation of *śleṣman* which is later liquefied in spring, giving rise to the disorders of *śleṣman.*

In summer, the sun is excessively hot, the wind is dehydrating, there is scarcity of water, and the cereals and herbs become dry, sapless, and light in weight. These conditions give rise to an accumulation of *vāyu* in the human system, which is later diffused throughout the body by the moisture that arrives with early or first rains. Hence *vāta* disorders occur in the early rainy season.

Thus the three humours, *pitta, śleṣman,* and *vāta,* accumulate successively in rains, winter, and summer, but generate their specific disorders later in the early autumn, spring, and early rains. These seasons are therefore the proper periods when measures to check the specific humoral disorders should be taken in hand. The latter may also be naturally rectified with the change of season. *Pitta* disorders are rectified in the seasonal conditions of the late autumn, *śleṣman* disorders in summer, and *vāyu* disorders in the early autumn (*Sū.* **6**, 10, 15).

The natural condition of the different parts of the day are comparable to those of the natural season, so far as their effect on the human body is concerned. The forenoon of the day is the index of the vernal season; the noon, of summer;

the afternoon, of the early rains; the dusk, of the rainy season; the mid-night, of the autumn; and the dawn, of late autumn. At these parts of the day the three humours are successively accumulated, affected, and rectified in a manner similar to that of the seasons (*Sū.* **6,** 16).

The east wind is beneficial to fatigue and disorders of the first and the third humour. It, however, adversely affects the blood and the second humour, causes acidity, and aggravates wounds, ulcers, and poisoning cases.

The south wind is the best among the four and invigorates the body strengthens the eyes, soothes the blood and the second humour, without having any adverse effect on the other humours.

The west wind dries up the oily and fatty matters of the body, as also the secretions. This reduces the bodily strength and vitality.

The north wind has no adverse effect on any body humour, except increasing the discharge of phlegm from the nose and throat. It increases strength and is beneficial in constipation and poisoning (*Sū.* **20,** 22-25).

Effect of geographical environment: There are three main types of geographical features, found in different lands. *Anūpa* (moist) land contains large number of ponds, marshes formed by accumulated water, rivers and channels, together with dense forests which make it difficult to traverse. Its air is humid and gentle. Under such conditions, the people become tender in body, generally of handsome appearance but adipose, and are specially susceptible to diseases due to the derangement of *vāta* and *kapha.*

Jāṅgala (prairie type) land is mostly composed of extensive flat plains with a few isolated hillocks and scanty vegetation. Surface water accumulated during the rains is drained off rapidly, leaving the country nearly arid. Warm wind blows during the greater part of the year. Under such conditions the people become wiry in appearance, powerful, tough, muscular in physique, and are specially susceptible to *vāta* and *pitta* disorders.

Sādhāraṇa land (land of intermediate character) exhibits the topographical features of both the above-mentioned classes of lands. The temperature and rainfall are equable. Under such conditions the people attain a desirable equilibrium of the body humours, which leads to a good health and physique (*Sū.* **35,** 35-36).

Influence of age: As a general rule, deranged *kapha* is common in the childhood, deranged *pitta* in the middle age, and deranged *vāyu* in the old age (*Sū* **35,** 27).

Diagnosis of Deranged Humours

Whenever one or more of the humours become deranged, they give rise to symptoms which turn progressively more acute, if left untreated. Hence, diagnosis and medical treatment are essential as early as possible.

The earliest symptom of derangement of the first humour is fullness, or pressure, felt in the abdominal area; that of *pitta* is a yellowish tinge visible on the body surface; that of *kapha* is lassitude.

Symptoms in the next stage are disturbed and agitated condition of the blood, pain in the body, and movement of intestinal winds in the case of deranged *vāyu*; acid eructations, excessive thirst, and burning sensation in the case of deranged *kapha.*

In the third stage the following symptoms develope; abdominal distension and rumbling sounds in the intestine in the case of *vāyu*; burning and chilly sensation in the case of *pitta*; complete aversion to food, indigestion, vomiting, muscular inertia, and heavy feeling in the limbs in the case of *kapha.*

In the fourth stage of development, the deranged humours get trapped in abnormal positions in the body and give rise to specific maladies, according as the vitiated humour is located in the abdomen, rectum, scrotum, neck and head, flesh, skin, fat, lower extremities, etc.

The final stage in the development of deranged humours is the full manifestations of the different humoral maladies in their virulent forms.

The text enjoins that a physician should be consulted as soon as any symptom of a deranged humour is detected. It also states that the duty of the physician is to check immediately by proper measures the progress of the derangements, so that the development of the next stage is averted. If more than one humour are simultaneously affected, the more aggravated humour should be treated first, but taking care not to provoke the other two in any way. This is of great importance in *sannipāta* where all the humours are simultaneously affected, and treatment requires utmost skill and knowledge (*Sū.* **21**, 25-44).

Healthy blood is neither too thin nor too transparent, and has the rich red colour of cochineal. When the first humour, *vāta,* becomes affected, the blood becomes thin, transparent, dark, frothy, and quick to flow. In affections of *pitta,* the blood becomes thin, blue, green, yellow or brown in colour, emits a fishy odour, and is shunned by flies and ants. In *kapha* affections, the blood becomes slimy, slow-moving, and assumes the colour of raw flesh or of yellow ochre. When two humours are jointly affected, the blood assumes a mixed colour with characteristic features of both. When all the humours are affected, the blood has the lustre of sour rice-gruel and emits a foetid smell (*Sū.* **14**, 17).

Consequences of Deranged Humours

It is the basic idea of Suśruta and of Āyurvedic science, that indifferent health, deformities, diseases and even death are caused by deranged humours. A very large number of diseases, which are supposed to be caused by one or more of the deranged humours, or by deranged blood, are named in Table VII. In fact their diagnosis, prognosis, and treatment are based mainly upon the humoral theory, and a major part of the text is devoted to a discussion of this aspect of the subject.

Sweet, acid, and saline tastes have the capacity for pacifying the provoked *vāyu,* and hence all substances with these tastes are valuable as drugs and articles of diet in this condition. Sweet, bitter, and astringent tastes act in the same manner upon deranged *pitta;* and pungent, bitter, and astringent tastes upon deranged *kapha.* (*Sū.* **42**, 3).

When the first humour is weakened, there is gradual loss of vigour, speech, liveliness, and consciousness. When *pitta* becomes feeble, there is a gradual loss of body heat, weakening of digestive function, and impairment of body complexion. When *śleṣman* becomes feeble, there is desiccation of the body with burning sensation, an empty feeling in the stomach and the body cavity, looseness of joints, excessive thirst, weakness, and insomnia. In all these cases, treatment should be aimed at the restoration of the depleted humour (*Sū.* **15,** 9).

An excess of *vāyu* in the system is marked by roughness of the skin, emaciation, darkness of complexion, trembling of limbs, craving for warmth, desire for heat-producing foods and drinks, insomnia, weakness, and hardened stool. Excess of *pitta* is marked by sallow complexion, insomnia, burning sensation, craving for cool places, cold drinks and foods, physical and mental weakness, fainting, and a marked yellow colour of the eyelids and stool. Excess of *kapha* in the system is marked by coldness or pallor of the skin, numbness, a feeling of heaviness in the limbs, drowsiness, languor, and a feeling of looseness in the joints. (*Sū.* **15,** 14).

The three humours may be provoked by various causes. *Vāyu is* deranged by prolonged hard work, violent movements, incontinence, excessive study or mental efforts, sudden fall from a height, injuries to the body, rapid changes of temperature, keeping late hours, carrying heavy loads, taking of excessive quantities of pungent, astringent, bitter, or cold articles in the diet, fasting, overeating, irregular meals, and suppression of bodily functions and urges. *Pitta* is deranged by anger, grief, fear, fatigue, hunger, exposure to the sun, undigested food, unnatural sexual practices, an excessive use of pungent, saline, acid, or hot food. *Kapha* is deranged by sedentary habits, sleeping in the day, use of excessive quantities of heavy, slimy, sweet, acid or saline food, and by the use of an excessive quantity of flesh of aquatic animals as food.

Blood is deranged by all factors which affect *pitta,* by taking food in the absence of appetite, by too frequent meals, excessive indulgence in cold drinks and heavy food, daytime sleep, anger, exposure to the sun or heat, excessive fatigue, injury due to sudden blows, indigestion, and also secondarily by the deranged conditions of *vāyu* and *kapha* (*Sū.* **21,** 23-30).

D. Sleep and Dream

Sleep is a natural function of all living creatures, and occurs whenever the centre of consciousness (*cetanā*) is overpowered by an accumulation of inertia (*tamas*). In this condition, the sensation-conveying channels of the body are blocked and choked by *śleṣman* when such *śleṣman* is full of *tāmasika* principle. When the effects of *sattva* and *rajas* principles are feeble or subdued, unconsciousness or coma (*tāmasika nidrā*) occurs. This condition, though apparently akin to sound sleep, is different from the latter.

In sleep, the *jīvātmā* (the soul, or the *puruṣa* in the body), which never sleeps, may convey glimpses of occurrences and experiences of previous existence to the *rājasika* principle of the mind. This *rājasika* principle does not completely lose its consciousness in sleep, but is unable to come back to the normal state of consciousness. Normal consciousness is restored and the person awakes from the sleep, only

through the agency of the *sāttvika* principle. In *tāmasika* sleep, the accumulation of inertia may be so great that the *sāttvika* principle may find it difficult to perform this restoring function, and the *tāmasika nidrā* is prolonged for extended periods. If the *sāttvika* principle is ultimately unable to overcome the *tāmasika* principle, death occurs.

A person of the *tāmasika* type (with a preponderance of this principle in his mind and body) can sleep at any hour of the day ; a person of *rājasika* temperament sleeps only once during the day and night, and that for a definite period ; a person of *sāttvika* temperament requires a minimum of sleep and that only at the late hours of night.

When the *śleṣman* is very feeble in a person, he can hardly sleep at all. Persons with aggravated *vāyu* and consequent physical and mental ailments can have only disturbed and fitful sleep (*Śā.* **4**, 33-36).

While discussing omens which pre-indicate future events, Suśruta advances a theory that dreams are warnings about future happenings, specially about diseases or death. It has been said that the eternal soul (*jīvātmā*) may convey glimpses of things, not cognizable to the conscious mind, to the semi-conscious *rājasika* part of the mind in sleep. These dreams are glimpses of things unknowable in the normal state, but known to the *puruṣa*. No explanation is given how the future may be known to the soul ; for, it is one of the attributes of the *puruṣa* (omniscient or all-knowing), and not of the *karmapuruṣa* (*Śā.* **4**, 35).

The text describes various types of dreams, indicative of physical weakness, ill-health, impending diseases, or death (*Sū.* **29**). Dreams characteristic of good health are also described in the same chapter. Delusions, vision of abnormal things or happenings, and hearing of supernatural sounds are also pointers to diseases or death (*Sū.* **29**, 15-24).

E. Time

Time is self-existent (*svayambhū*), without beginning, without end, and without middle. Even the minutest fraction of time is ever-existent. Time is responsible for creation, as well as for dissolution of all things. Hence, life and death are also functions of time (*Sū.* **6**, 1-2).

The fractions of time succeed each other perpetually like the different parts of a revolving wheel. This wheel of time (*kālacakra*) revolves eternally with continuous change.

Time is reckoned and measured by the motion of the sun in the heavens (*Sū.* **6**, 3, 8).

V

EMBRYONIC GROWTH AND OBSTETRICS AND POST-NATAL MEASURES

It has been mentioned earlier (page 10) that the combined sperm-ovum is transformed into a living foetus as soon as the *puruṣa* enters into it. The constituents that are present in such a zygote, endowed with life, are : the five primal

elements forming the material body of the zygote; the thermal principle (*agni*) contributed by the mother's ovum, which is potentially the second humour *pitta;* the placid principle (*saumya*) from the father's sperm, which is potentially the third humour *śleṣman*; the omnipresent cosmic *vāyu,* which becomes the first humour *vāta;* the three fundamental reals (*guṇas*) — essence, energy, and inertia; the five senses; and the *bhūtātmā* or *karmapuruṣa.* This complex forms the living entity (*Śā.* **4**, 2).

Immediately after conception, the active principles present in the foetus begin to play their individual parts in its future development. The cosmic principle *vāyu* divides the material particle into the three bodily humours, the seven bodily *dhātus,* the elimination products, the individual limbs and organs, etc. The fiery principle, *tejas,* sets the process of metabolic change. The liquid principle, *apas,* is responsible for its humidity. The solid principle, *pṛthvī,* moulds it into the shape of its species. The ether principle, *ākāśa,* promotes its growth and development (*Śā.* **5**, 2). Seven successive layers of epidermis, created out of the metabolic substances present locally, are then formed and deposited on the rapidly transforming foetus (*Śā.* **4**, 3).

The foetus exists as an indefinite gelatinous mass during the first month of pregnancy. In the second month, it grows in size and becomes denser due to fresh accretion of the five primal elements into its mass through the agency of the three humours. At this stage, it first acquires a recognizable shape. A spherical shape indicates a male, an elongated shape indicates female, and a tumour-like shape indicates a hermaphrodite creature to be born. In the third month, all the limbs and organs, including the heart, are developed in their rudimentary forms. At this stage, the foetus first acquires a consciousness of its surroundings through the action of its heart, and begins to long for sense-objects. This longing is expressed vicariously through the mother, who is said to acquire a second heart at this stage. If, at this stage of pregnancy or later, the desires of the mother are repressed or made to remain ungratified, congenital defects are caused in the foetus and the future child may be paralytic, hump-backed, dwarf, lame, crooked-limbed, blind, or suffering from defects of the sense-organs (*Śā.* **3**, 14, 15). In the fifth month, the child becomes endowed with a mind (*manaḥ*) of its own and is said to wake up. In the sixth month it acquires intellect (*buddhi*). In the seventh month, the limbs and organs of the body approximately attain their future shapes. In the eighth month, the vital life-force (*oja-dhātu*) in the heart of the foetus becomes restive and has a tendency to move to and fro between the two hearts of the mother and the child. Hence a child prematurely born at this stage stands the risk of immediate death, due to possible lack of this vital life-force. The actual delivery takes place in the ninth month or later, but an unusually prolonged period of gestation, carried late into the eleventh month or the twelfth month, is said to be a pathological condition requiring medical treatment or surgical interference (*Śā.* **3**, **16**; *Śā.* **5**, 48). The foetus lies in a doubled-up position with its head downwards in the uterus. Hence at the time of parturition the head should emerge first under normal condition at the proper time. If any other portion of the body appears first, it is abnormal presentation and a pathological condition.

If the placenta is retained in the mother's body after delivery it causes many complications and may actually endanger the life of the mother. Measures and procedures for the removal of the placenta in such cases are described in detail (*Śā.* **10,** 17-18).

It is interesting to note that according to modern ideas the first phase in the development of the foetus is the segmentation of the unicellular zygote into a mass, of differentiated cells, followed by the process of gastrulation, which leads to the establishment of three primary cell-layers, the ectoderm and the endoderm, and of the mesoderm. The various stages in the anatomical development of the foetus, as established by dissection and examination, do not substantially differ from Suśruta's description.

It is possible to foretell the sex of the future child from visible signs and symptoms shown by the mother. A list of such indicative signs is given in the text (*Śā.* **3,** 20).

The growth and development of the foetus takes place by means of the umbilical cord, which serves as a channel for the *rasa* (lymph-chyle) formed in the mother's body. This nourishment of the foetus from the mother's body begins as soon as the foetus becomes endowed with life, and continues upto the time when the child ceases to be connected with the mother (*Śā.* **3,** 17).

Suśruta asserts on the testimony of Dhanvantari, his preceptor, that the development of all parts and organs of the foetus goes on simultaneously, and is a continuous process from the moment of conception. But these bodily parts and organs cannot be perceived in the early stages because of their microscopic order (*Śā.* **3,** 18).

There is practically no movement of *vāyu* in the stomach and intestines of the foetus. Hence these parts do not function in a foetus. A membrane covers its mouth, and its throat remains full of phlegm (*kapha*). Owing to these reasons it is unable to emit any sound. It receives all the nourishment it needs from the metabolic products of the mother and also breathes and sleeps in unison with the mother. It can move, but such movements are limited by the size and shape of the womb (*Śā.* **2,** 52-53).

Elaborate and strict directions are given for the guidance of the mother, in order to protect the foetus from all possible physical or mental injury and to provide for ideal conditions for its growth and development. The mother should observe cleanliness of the body and dress, lead a pious and happy existence, avoid painful sights and contacts, or objectionable smells and noises. She should take only clean, freshly prepared and palatable food, avoid solitary places, use a low, soft bed with many cushions and pillows. She should also follow all directions, applicable to one during the menstrual period, regarding physical labour, mental excitement, intimacy with members of the opposite sex, and personal conduct. All these directions are to be followed up to the time of delivery (*Śā.* **10,** 2).

The diet is periodically changed in order to give the foetus the best nourishment at different stages. During the first three months the diet should be rich in

cooling and sweet articles with a preponderance of liquid foods. The best quality of rice should be taken with milk in the third month, with curds and milk in the next two months, and with clarified butter in the sixth. From the fourth month, apart from generous quantities of milk and milk-products, tasteful soups and preparations made from light meats should also be given, (*Śā*. **10**, 3).

Cordial and stomachic drugs are prescribed from the seventh month. In order to keep the *vāyu* in the mother's body in a free and healthy state, the bowels should be kept clean with enemas. In the last stage of pregnancy, liquid foods with a preponderance of oils and fats, and meat-soups are recommended (*Śā*. **10**, 3).

The text goes on describing the symptoms of imminent labour and the actual nature of labour-pains ; it also recommends the best posture of the expectant mother at such times, and attitudes and methods to minimize labour pains. Further detailed directions and special instructions in case of abnormal presentations and protracted or obstructed delivery, are also given for the midwives. In addition, the text lays down the best specifications for the delivery bed and the confinement room (*Śā*. **10**, 4-10, 20).

A severe pain, felt by the pregnant woman in the region of the uterus, bladder, waist or lower portion of her back, indicates a possible displacement of the foetus from its usual position, or even an imminent miscarriage (*garbha cyuti*). Immediate cooling and soothing measures are prescribed. These should be followed by the administration of certain drugs in boiled milk and honey or in sweetened fruit-juices. Local applications of medicated plugs are also prescribed in order to stop further displacement. But, if miscarriage does take place in spite of, or in the absence of, such measures, the mother should be immediately treated medically with a view to repair the damage to her system and to restore her general health (*Śā*. **10**, 45-57).

It should be noted that in prescribing such measures, Suśruta is not only concerned with the well-being of the child, but also with the health of the mother. In fact, Suśruta recommends abortion in certain cases. When the foetus is known to be defective, or damaged beyond repair, and there is no hope of a normal birth, surgical removal is prescribed. The only consideration in such an eventuality is the life and and future health of the mother, and the surgeon is advised not to wait for the natural termination of pregnancy. Craniotomic operations, involving the destruction and subsequent removal of the foetus, are prescribed in certain cases of this nature (*Ci*. **15**, 6-7).

The normal diet for a new-born baby is breast-milk, but before that is available, it should be fed on honey, clarified butter, and small quantities of the pulverized drugs like *ananta* (*Hemidesmus indicus*) and *lakṣmaṇā* (*Atropa mandragora*) (*Śā*. **10**, 13-14).

Whenever the service of a wet-nurse becomes necessary, only one should be allowed to nurse the baby. Great care should be exercised in the choice of such a wet-nurse. She should be of good birth and character, free from diseases or deformities, neither too young nor too old, scrupulously clean in body and in perfect physical health as far as possible. If the flow of her milk is found inadequate or excessive, the

condition should be rectified by methods and medication, recommended for the purpose. The diet of the wet-nurse should be strictly regulated so that her digestive power and health remain unimpaired and her humours undisturbed. In the event of suitable breast-milk being unavailable, goat's milk is recommended as a substitute (*Śā.* **10,** 22-24). Boiled rice and other normal foods can be given only from the sixth month onwards (*Śā.* **10,** 39-40).

The text gives a list of common maladies from which new-born infants often suffer. Vomiting, abdominal distension, constant crying, inability to move its head and limbs, closely shut eyes, insufficient quantity of urine and stool, are symptoms which indicate bad health or wrong diet. Immediate medical treatment is necessary in such cases, but any drug or diet should be given in very small doses. Such drugs can be conveniently used by local application while nursing the child. Even a baby, who seems normal, is highly susceptible to mental and physical shocks, and it should never be left alone or helpless, or be frightened ; it should not be exposed to any shock, nor suddenly roused from sleep, nor handled carelessly and subjected to any rough treatment. No attempt should be made to make it sit up until it does so by itself ; otherwise its back-bone may be damaged permanently. The infant should be guarded against exposure to sun, heat, glare, storms, dust, smoke, total darkness, and be kept happy with toys and bright objects, and generally treated with utmost love and care. Being denied of such care and protection, the infant becomes agitated, frightened, and angry, it cries constantly and vomits out the milk it has taken and ultimately becomes physically weak, and dull in complexion with loss of sleep, accompanied by acute indigestion (*Śā.* **10,**. 38-41).

Detailed instructions are also given in the text for the mother's conduct, diet and care of the body after delivery, until her normal health is restored, which is indicated by the reappearance of her menses. But, even if the mother recovers her normal health shortly after delivery, a minimum period of forty-five days is considered necessary for convalescence (*Śā.* **10,** 12-16). These measures are necessary as the mother is specially liable to attack of diseases after confinement (*Śā.* **10,** 17).

VI

HUMAN BODY — ITS ANATOMY AND PHYSIOLOGY

A. Anatomy

The human body consists of six main parts (*aṅgas*): namely, the two arms and the two legs, the trunk or middle portion, and the head. These parts are further subdivided into individual limbs (*pratyaṅga*) of the body. Some of these limbs (skull, forehead, face, nose, chin, neck, back, pelvis, belly, umbilicus, etc.) occur singly. Others (ears, eyes, nostrils, eyebrows, temples, shoulders, cheeks, armpits, breasts, testicles, sides, buttocks, thighs, knees, arms, etc.) occur in pairs ; besides there are twenty digits (fingers and toes) of ten each. The human body also contains (*Śā.* **5,** 3-49 ; **6,** 2-5):

(i) Seven layers of the skin (*tvac*).

(ii) Seven sets of connective and supporting tissues (*kalā*).

(iii) Seven fundamental elements of the body (*dhātu*).

(iv) Seven containers or receptacles (*āśaya*), for *vāyu, pitta, śleṣman,* blood, undigested food (*āma*), digested food waiting metabolic transformation (*pakva*), and for urine (*mūtra*). Women have an extra receptacle for the *garbha* or foetus. The intestines (*antra*) measure fourteen cubits in length for adult males and twelve cubits for females.

(v) Nine orifices (*srotas* — ears, eyes, mouth, nostrils, rectum, and urinary passage). Women possess three more orifices; two for conveying breast-milk and one for menstrual discharge.

(vi) Sixteen sinews (*kaṇḍara*); two in each arm and two in each leg, four in the neck and four in the back. Those of the arms and legs extend upto the roots of finger or nails or toe-nails, those of the neck pass through the heart and terminate in the regenerative organ, and those of the back terminate at the lower extremity of the back.

(vii) Sixteen plexuses (*jāla*); each wrist and ankle containing four different types of plexus, dominated respectively by muscles, veins, ligaments, and bones. These plexuses are intertwined and cross each other in a complex network.

(viii) Six complexes of muscles (*kūrca*), ligaments, veins, nerves, and bones; two in the hands, two in the feet, one in the neck and one in the root of the sexual organ.

(ix) Four great muscular cords (*rajju*), beginning at both sides of the spine; one pair going inside the body and the other pair radiating on the surface in various directions. These cords serve to bind the individual muscles into composite patterns.

(x) Seven fibrous suturings (*sevanī*); five in the cranium, one in the tongue and one in the male organ.

(xi) Fourteen (or possibly eighteen) bony complexes (*saṃghāta*) situated in the ankles, knees, groins, wrists, elbows, shoulders, cranium and in the trifurcated junction of breast-bone with the clavicles.

(xii) Fourteen terminal formations (*sīmanta*), each covering a bony complex.

(xiii) Three hundred skeletal parts (*asthi*) are listed in the text but Suśruta points out that the number, according to ancient authoritative texts, is three hundred and sixty. According to their characteristic formation, skeletal parts may be of five types, namely, *kapāla* (flat), *rucaka* (comb-like), *taruṇa* (cartilagious), *valaya* (curved), and *nalaka* (cylindrical or tubular). The skeletal formation serves as the hard core which supports the body and keeps it erect; it also serves, as mooring for the muscles which are firmly bound to the bones by ligaments and veins.

A complete list of all bones and skeletal units will be found in Table V.

(xiv) Two hundred and ten joints (*sandhi*), of which sixty-eight are in the four extremities, fifty-nine in the trunk, and eighty-three in the neck and head. These *sandhis* or joints are of eight different classes, named after common articles they resemble most. These are : hinge-joints (in fingers, ankles, wrists, knees, and elbows) ; mortar and pestle joints (shoulder, hip, etc); fist-shaped joints (anus, vagina, arm-pits, etc.) ; irregular and elongated joints (neck and spinal column) ; seam-like joints (pelvis and forehead) ; crow-beak joints (jaw joints) ; circular joints (throat, eyes, etc.) ; and helical joints (ear-bones and nostrils).

The list of joints in the text includes only bone-joints, but does not mention the innumerable joints with muscles and ligaments.

(xv) Nine hundred ligaments (*snāyu*) ; six hundred in the four extremities, two hundred and thirty in the trunk, and seventy in the neck and head. They are of four varieties : ramifying or branching, circular, thick and broad, and perforated.

(xvi) Five hundred muscles (*peśī*) ; four hundred in the four extremities, sixty-six in the trunk, and thirty-four in the head and neck. The muscles cover, support, and strengthen the ligaments, veins, bones, and joints of the body. According to their position and utility the muscles can be thick or slender, small or extensive or rounded, short or long, hard or soft, and smooth or rough.

Women have twenty extra muscles ; five in each of the two breasts which remain undeveloped before puberty, four in the vagina, three in the lowest extremity of the spine, and three in the duct which carry the sperm inwards and the ovum outwards. The muscles of the male organs and testis have their counterparts in the outer sex organs and the uterus of the women. The sex organ of a woman has three involuted turns, the uterus being situated in the third posterior involuted turn.

(xvii) One hundred and seven vital parts (*marma*) ; forty-four in the four extremities, twelve in the chest and the back, fourteen in the back, and thirty-seven in the neck and above. A special chapter on the importance and description of these vital parts will be found on page 88.

(xviii) A very large number of ducts, tubes, veins, arteries, and capillaries (*yogavaha srotas*) ; an account of which is given in the next chapter.

Suśruta gives further a more or less elaborate description of the structure of the eye (*Utt.* 1, 1-10).

The eye-ball (*nayana-budbuda*) is not an exact sphere. From front to back (sagittal diameter), it measures about less than an inch, while the transverse diameter is about an inch, and the all-round (circumference) length is about $1\frac{1}{4}$ inches. Thus it is an elongated sphere. Among the constituents that make the eyes, the muscles are formed out of the earth element ; the blood that flows through the veins of the eyes is formed from the fiery element ; the black part of the eyes, from the gaseous element ; the white part, including the clear and transparent matter inside the eye-ball, from the aqueous element ; the tear-ducts (*aśru-mārga*) and other passages, from which the secretions are discharged, from the ethereal element.

The *kṛṣṇamaṇḍala* (black portion) of the eye covers one-third of the surface of the eye; the *dṛṣṭi* (pupil) occupies one-seventh of the latter (*kṛṣṇamaṇḍala*). The eye comprises of five *maṇḍalas* (circular region), six *sandhis* (joints), and six *paṭalas* (layers or coats).

The five *maṇḍalas* are: *pakṣma maṇḍala* (circle of the eyelashes), *vartma maṇḍala* (the eyelids), *śveta maṇḍala* (white region — sclerotic), *kṛṣṇamaṇḍala* (black portion — iris with pupil), and the *dṛṣṭimaṇḍala* (the pupil).

Of the six *sandhis* (joints), the first binds eyelashes with the eyelids; the second, eyelids with the white portion (sclerotic) — the fornices; the third, the white portion with the black portion — the limbus; the fourth is situated between the black portion and the *dṛṣṭi* (pupil); the fifth lines in the *kanīnaka* (interior corner) — the inner canthus and the *apāṅga* (exterior corner) — the outer canthus.

Of the six *paṭalas* (layers), two are in the eyelids and four in the eye proper. The first of the latter, forming the anterior coat, holds the *jala* (aqueous humour) and *teja* (light and heat); the second is supported by *piśita* (muscles); the third is supported by *meda* (fat), and the last by *asthi* (bone).

The black portion (*kālaka*) of the eye is held in position by *śirā* (vein), *kaṇḍara* (sinews), and *meda* (fat); and the part beyond the black portion (i.e. the white region) by *śleṣman* (phlegm or viscid substance) supported by a number of vessels.

Suśruta's description of the structure of the eye, though somewhat detailed, is however not quite clear and intelligible at places, and is frequently confusing. In the light of our modern knowledge it presents a rather crude and faulty picture.

B. Physiology

The Circulatory System

The body is sustained and nourished by *vāyu, pitta, kapha,* and blood, conveyed through innumerabe channels (*śirā*) to every part of the body. These channels branch out into finer and finer ramifications until they become invisible, like the branch channels of water irrigating a field. They originate from the area of the umbilicus and spread out upward, downward, and in oblique directions. Ten major channels branching out into one hundred and seventy-five minor channels carry *vāyu* mainly. Similarly forty major channels and seven hundred minor ones carry *pitta, kapha,* and *rakta*. Smaller branches and sub-branches of these channels are countless in numbers; many of them are so minute that they are nearly or wholly invisible (*Śā*. 7, 1-5).

Suśruta admits the anomaly in terminology of the three types of body-channels: *śirā, srota,* and *dhamanī*. Any rigid rendering of these terms into their modern equivalents as veins, ducts, and arteries will prove erroneous and confusing. This confusion is due to the fact that all the three are found at the same location, have similar shapes and branching ramifications, and carry out their functions in a similar manner. But their actual functions are quite different from one another. They are said to remain full and distended even after death (*Śā*. 9, 1-2).

All *śirās* convey the three humours and blood; all *srotas* carry *rasa* and other products of body metabolism; but the *dhamanīs* can be distinguished into different groups according to their functions. Out of these twenty-four *dhamanīs*, having their roots in the navel, ten rise upwards and sustain the body. Near the heart each of these ten is divided into three branches. Of these total thirty branches, two serve as channels for *vāyu*, two for *pitta*, two for *kapha*, two for blood, two for stomach-chyle, two convey sound, two sight and colour, two smell; two taste, two serve to produce speech, two produce vocal sounds other than speech, two cause sleep, two maintain conscious state, two carry lachrymatory fluid, and the remaining two carry milk to the breast of women, or coursing through the breast of a man carry seminal fluid. All of them also jointly sustain and maintain the limbs and organs situated above the navel. Apparently Suśruta includes even nerves under the general name of *dhamanīs* (*Śā.* **9**, 3-5).

Similarly ten major *dhamanīs*, going in a downward direction, branch out in three directions, at a place midway between the stomach (*āmāśaya*) and the intestines (*pakvāśaya*). Out of these total thirty branches, two carry *vāyu*, two *pitta*, two *kapha*, two blood, and two *rasa* as in the previous case; two carry solid food, two liquids, two convey urine to the bladder, two carry semen or menstrual secretions into their receptacles, two serve for seminal discharge or for menstrual flow, two carry stool into the lower intestines, and the remaining eight convey perspiration to the other four major *dhamanīs* which run in oblique directions. All the downward *dhamanīs* also sustain and maintain the limbs and organs situated below the level of the navel (*Śā.* **9**, 6).

The remaining four major *dhamanīs* branch and sub-branch themselves into finer and yet finer vessels, the total number being impossible to count. The fine subdivisions end in the skin pores and carry *rasa* and perspiration in order to maintain, lubricate, and irrigate the body. These capillaries also serve as carriers for moisture and the essential principles of ointments, liquids, powders, and plasters, applied to the surface of the body. The heat of the body helps in this last-mentioned process. The capillaries also convey pleasant, as well as painful, sensations from the skin (*Śā.* **9**, 8).

All *dhamanīs* are provided with minute orifices throughout their side-walls. Through these minute orifices they supply *rasa* to all parts of the body. They also convey the sensations appropriate to the different sense organs. At the time of death, they break up the combination of five elements, constituting the body (*Śā.* **9**,9-10).

There are also present in the body, a very large number of *srotas* (body-channels), which perform different functions of the body. They convey *prāṇa* (life breath), food, water, *rasa*, blood, the elements of muscles and fat, urine, stool, and semen (or, menstrual fluid). Those, which convey *prāṇa*, have their origin in the heart and in the two major ascending *dhamanīs* which carry *rasa*; those, which carry food, have their origin in the stomach and in the two major *dhamanīs* which carry food; those, which carry water, originate in the palate and the throat; those, which carry *rasa*, originate in the heart and in the major *rasa*-carrying *dhamanīs*; those, which carry blood, originate in the liver, spleen, and the corresponding *dhamanīs*; those, which carry the elements of the muscles, originate in the nerves, tendons, skin, and major

dhamanīs which carry blood; those, which carry the elements of fat, originate in the loin and kidneys; those, which carry urine, have their origin in the bladder and urethra (*meḍhra*); those, which carry stool, originate in the anus and intestines; those, which carry semen, originate in the muscles of the chest and in the testicles; those, which carry menstrual flow, originate in the *jarāyu* (uterus) and in the two major *dhamanīs* which carry *ārtava* (ovarian secretions). Minor or major injuries to any *srota*, or surgical piercing or cutting of the same, cause specific symptoms which are described in the text. These may be treated by surgery or medicine; but the chances of ultimate recovery are very small, if the *srota* becomes perforated or severed (*Śā*. **9**, 11-12).

When conveying the *vāyu* in its normal state, the *śirās* are vermilion in colour and spongy to the touch. The *vāyu* in its normal state, coursing through the *śirās*, performs its specific functions: expansion and contractions of organs and tissues; generation of speech, and clarification of intellect and sense-perception. *Śirās*, carrying *pitta* in its normal state, are blue in colour and warm to the touch. The *pitta* while coursing through the *śirās* in its normal state, produces healthy glow to the skin, creates desire for food and power for digestion, and imparts vitality to the system. The *śirās*, carrying *kapha* in its normal state, are white in colour, and are hard and cold to the touch. The *kapha* in its normal state imparts firmness to the limbs and joints, and generates physical strength. The *śirās*, carrying blood in its normal state, are bright red in colour and neither cold nor hot to the touch. Blood in its normal state, while coursing through the *śirās*, gives rise to the production of other fundamental body elements, brightens the body complexion, and aids the sense of touch (*Śā*.**7**, 8-11, 13).

Formation of Urine and Urinary Calculi

Urine is formed by draining off of the waste or refuse matter in the body by water. Formation of urine, therefore, plays an essential function in the preservation of the body. The water content of the urine is derived from the drinking water and from the moisture of food taken (*Sū*. **15**, 7).

Urine is, therefore, a bodily fluid which serves to separate, wash away and eliminate waste metabolic products formed in the body (*Śā*. **15**, 8). The system of channels, carrying urine inside the body, is compared by Suśruta to the drainage system of a land, consisting of small channels and water-courses which constantly replenish a lake overflowing into the sea by a single channel. Thousands of primary urinary ducts carrying urine, so fine as to be invisible to the naked eye, are constantly carrying out their function of drainage, even during sleep. These fine ducts receive the waste products of the body in the form of liquid from the stomach or a part adjoining the stomach. The transference of wastes into these ducts is possible by a process similar to the slow filling up of a new earthenware pitcher, kept immersed up to its neck in a larger vessel of water, by means of minute pores in the sides of the pitcher. The fine channels merge into larger and larger ducts and finally into two major channels which communicate with the intestinal tract. These major channels lead into the reservoir of urine, known as the *mūtrāśaya* or *vasti* (bladder) (*Ni*. **3**, 14).

In its empty state, the bladder is a small thin vessel with a single opening in the lower side. This opening is normally kept closed by the agency of a network of nerves and connective tissues. The *apāna vāyu* controls the retention of urine in the bladder, as well as its periodic discharge. The external orifice of the bladder opens to the outer generative organ and is connected by a branch tube with the testicles in males. The bladder, though a receptacle of waste matter, is one of the vital centres of the body (*prāṇāyatana*); any serious injury to it may prove fatal (*Ni.* **3,** 14).

The three humours also make their way through their respective ducts or channels into the bladder, where in unison with the urine they give rise to the formation of a deposit of slimy waste products or a stone as a result of their derangement. Urine always contains these waste products in solution; but when the humours are deranged these waste products separate in the form of sediments of sand-like particles, or even gravels of fairly large size. These solid matters may obstruct the opening and external passage of the bladder, which prevents their normal elimination and gives rise to pain and other symptoms (*Ni.* **3,** 13). Thus urinary calculi grow inside the bladder by a process similar to the separation of visible particles and their gradual growth from clear and transparent liquids, or alternatively by a process similar to the sedimentation of solid matter from suspension (*Ni.* **3,** 15). The normal colour of urine is due to the pigment imparted to it by the variety of bile known as the *rañjaka pitta*. The deranged humours can, however, impart their own colour, smell and other properties to urine, making it abnormally coloured, thick, turbid, foul-smelling, etc. (*Ni.* **3,** 5).

The failure of normal urination is marked by an aching pain in the bladder with a scanty flow or dribble of urine. This condition can be remedied by taking sufficient quantities of substances which contribute to the formation of urine (*Sū.* **15,** 11). Similarly excessive formation and increased accumulation of urine in the system is caused by the excessive use of these substances. This condition is marked by acute distension of the bladder, constant urge for passing water, and by local pain. This can be remedied by corrective measures and soothing drugs, taking care not to reduce the secretion of urine to any abnormal extent (*Sū.* **15,** 14-15).

Suśruta, however, makes no mention of kidneys (*vṛkka*) and their function in the excretion of waste products from the blood in the form of urine.

Digestion and Metabolic Transformation

The fire, which creates hunger in a person, is divine, subtle in its essence, weightless and invisible like atoms. It is the agent for digestion (*pācakāgni*). It is known only by its digestive action on the various types of lymph-chyle (*rasa*) from food, and is created and maintained by the three vital *vāyus* (*prāṇa, apāna* and *samāna*), each located in its characteristic part of the body (*Sū.* **35,** 24-25).

Pācakāgni (digestive fire) is of four types : (i) *viṣama* (irregular) is caused by deranged *vāyu,* (ii) *tīkṣṇa* (excessively sharp) is caused by deranged *pitta,* (iii) *manda* (dull) is caused by deranged *śleṣman* and (iv) *sama* (equable), when all the humours are unaffected and maintain a desirable equilibrium (*Sū.* **35,** 20).

Sama-agni helps regular and beneficial digestion of food at proper time ; *viṣama-agni* causes distension of the abdomen, colic pain, constipation, dysentery, ascites, heaviness of limbs, intestinal sound, and loose motions ; *tīkṣṇa-agni* is able to digest a heavy meal in an unexpectedly short time and causes excessive appetite, parched throat and palate, sensation of heat and other bodily discomforts ; *manda-agni* causes slow digestion of even a very light meal, heavy feeling in the head and abdomen, cough, difficult breathing, nausea, and weariness (*Sū.* **35**, 21).

Treatment of all abnormal types of digestion should be directed to converting them to *sama-agni ; viṣama-agni* should be corrected by a diet of emollient, acid and saline substances ; *tīkṣṇa-agni* should be treated by purgatives and by a diet rich in cold, sweet, and cooling foods and buffalo-milk; as well as curd and butter prepared from it are also efficacious in cases of excessive appetite. *Manda-agni* should be treated by emetics and by a diet rich in pungent, astringent, and bitter articles (*Sū.* **35**, 23).

Assimilated food (chyle) becomes minutely dispersed, and its essence converted into an energy-giving bodily fluid, known as *rasa*. The *rasa* flows continuously through the entire system. It starts from the heart and is pumped through twenty-four arteries — ten ascending, ten descending, and four lateral — and constantly moistens, nourishes, maintains, and irrigates the human system by processes which cannot be properly understood. The nature and course of this *rasa*, which runs through the whole system, can be inferred from the growth, attenuation, or other modified condition of the body. *Rasa* also transquilizes, lubricates, and vitalizes the system. It obtains its colouring matters by flowing through the spleen and liver ; and in this coloured modification, the potent *rasa* is known as *rakta* (blood) (*Sū.* **14**, 4-7).

In women between the ages of twelve and fifty, a part of this blood is converted into menstrual flow. The menstrual blood (*ārtava*) is fiery in character (*Sū.* **14**, 8).

Blood originates from the five gross elements present in the food and has the properties of smell, fluidity, red colour, and lightness (*Sū.* **14**, 9).

Blood is the first transformation of the *rasa*, which is then successively converted into flesh, fat, bone-marrow, and finally semen. Thus all the body elements (*dhātus*) have their origin in *rasa*, and the living body is dependant upon it. Hence arises the importance of proper food and drink from which *rasa* is created (*Sū* **14**, 10).

Each stage in the conversion of *rasa* to its ultimate transformation as semen takes 3015 *kalās* of time (80.4 hours). Hence *rasa* takes 18.090 *kalās* (about three weeks) to be converted into semen, or menstrual fluid (*Sū.* **14**, 12-13).

The minute particles of *rasa* flow constantly through the entire body in a continuous stream, similar to the propagation of sound, light, and water (*Sū.* **14**, 14).

The final stage of conversion of *rasa* into semen (or menstrual blood) is not completed in the case of infants, but remains arrested in a latent form like the smell

in a flower-bud. In old age the power of *rasa* to replace the waste *dhātus* fails gradually, and bodily decay sets in (*Sū.* **14**, 15).

Excessive formation of *rasa* in the system is characterised by nausea and increased salivation. Excessive blood formation gives a reddish tinge to the skin and causes a perceptible thickening of the veins. An excess of flesh (muscular tissues) causes an increase in weight and bulk of the body, and gives rise to a rotundity of the limbs. Excessive formation of fat is marked initially by an enlargement of girth and by an increased gloss to the skin ; subsequently the stomach is enlarged, the body emits a foul odour, and the patient suffers from cough and hiccup. Excessive growth of bone-marrow gives a feeling of heaviness in the limbs and eyes. Excessive formation of semen causes a type of urinary calculus. Generally, excessive formation of any particular *dhātu* is followed by an increase of the successive *dhātus* (*Sū.* **15**, 13-14).

Depletion of *rasa* in the system causes angina and other heart diseases, a feeling of emptiness, and excessive thirst. Depletion of blood causes roughness of the skin, craving for acid foods and drinks, desire for cold things and a cool climate, and looseness and flabbiness of the veins. Depletion of flesh is marked by emaciation, looseness of the arteries, and by pain and inertia of the limbs. Depletion of fat causes enlargement of the spleen, a feeling of weakness in the joints, dryness of the skin, a pronounced craving for flesh and fat in the diet. Degeneration of the bones is marked by an aching pain in the bones and joints, decay of teeth and nails, and a general emaciation of the body. Depletion of the bone-marrow hinders formation of semen and causes stiffness of joints. Depletion, or excessive loss, of semen is marked by pain in the male organ and by sexual incapacity. In all such cases of depletion of the body elements, treatment is aimed at the restoration of the depleted *dhātus* (*Sū.* **15**, 10).

Ojas (essence of vitality) is supposed to be an all-pervading stuff present in the human system, imparting vitality and strength to the body. It is formed as a by-product in the stepwise formation of the *dhātus.* The vital life-force, activity, voice, complexion, and functioning of sense-organs — all depend upon *ojas.* In its physical properties, it is white in colour, soft, placid, cool, tranquil, and mobile. It contributes to the formation and growth of flesh. Its flow starts from the heart and circulates to every part of the body, permeating every minute subdivision of the system. Decrease or waste of this vital principle is caused by injuries, wasting diseases, anger, grief, cares, anxiety, fatigue, and hunger. Such factors cause either actual decay or abnormality of flow, and a change in the natural properties and functions of this all-important substance (*Sū.* **15**, 18-27).

The excretions of the body are the end-products of body metabolism. They are eliminated as the waste matter of the body. But during the processes of formation, each has a specific and essential role to play in the living body. Their actual separation, isolation, and elimination are carried out by the agency of the *vāyu* in the body, which is also responsible for their retention until the proper time of expulsion.

The elimination of faecal matter maintains *vāyu* and *agni* (digestive fire) in their proper proportion and balance. Urine serves to drain or wash off waste metabolic

product of the body and is indispensable for its health and preservation. Perspiration keeps the skin clean, healthy, and supple. Menstrual fluid serves both the purpose of an elimination, as well as that of procreation. Breast-milk is valuable for nursing the body (*Sū*. **15**, 7-8).

VII

FOOD

A. Dietetics

A living body is composed of the five fundamental elements (*mahābhūtas*). Food also is composed of the same elements. The basic reason for taking food is to augment and replenish the five fundamental elements in the body. Hence proper diet (*annapānavidhi*) in sickness or health is an integral part of medical treatment, according to Suśruta. Life depends upon food, which maintains the growth, health and strength of the body and nourishes the sense-organs and the mind. But food may also be the cause of ill-health, due to its impaired qualities, improper quantity, unsuitability to specific conditions of the body, incompatibility with other foods taken at the same time, or to defective cooking. Seasonal factors should also be taken into consideration in the proper selection of food (*Sū*. **46**, 498-499, 549).

Substances used in diet or as drugs (*dravya*) may be beneficial, harmful, or innocuous in action, depending upon their occurrence in combination with other substances.

Clarified butter, water, milk, and boiled rice of wholesome varieties are generally beneficial to all human beings; this is due to their inherent properties which are not lost even in combination. Fire, alkalis, and poisons are by nature injurious as they cause burning, suppuration, and even death. Other substances may be beneficial or harmful in certain seasons, and humoral states of the body, or may be incompatible when taken with substances of opposite properties. A detailed list of incompatible substances is given in the text (*Sū*. **20**).

The text names a large number of edible and potable substances, and describes their taste, digestibility, metabolism, physiological actions, and specific medicinal properties in many cases. An account of the physiological actions and dietetic values of a comprehensive list of edible and potable substances is given. These include the following (*Sū*. **46**):

(i) Nearly sixty different varieties of rice; twenty-two different pulses and lentils, barley, wheat, and other cereals. They are said to lose efficacy if grown on bad soil, or in the wrong season and also if diseased, infected with pests, gleaned when immature, or used before a proper interval of storing (usually one year or more).

(ii) More than hundred different kinds of flesh of land animals, birds, reptiles, aquatic and amphibious creatures. It is noteworthy that in Susruta's time there was no taboo against the use of beef, and flesh of carnivorous animals, birds, and

even reptiles, except on the ground of undesirable physiological effects. The text forbids the use of dried flesh or fish, decomposed meat, and the flesh of diseased, emaciated, poisoned, snake-bitten, and senile or freshly-born creatures. Eggs are nowhere mentioned as an article of food.

(iii) A very large number of fruits, some of which should be taken ripe and some in unripe condition. Unseasonal fruits, immature, overripe or worm-infested fruits, and fruits from blighted or diseased trees are declared unfit for use as food.

(iv) A large number of vegetables, roots, pot-herbs, edible leaves, edible flowers, sprouts, and mushrooms ; some oil-seeds and old-cakes ; about twenty different bulbs (rhizomes) ; and the soft pulp of the palm, date-palm and coconut trees.

(ii) The flesh of *lāva* (common quail, *Perdix chinensis*), *tittiri* (black partridge, *Francolinus francolinus*), *sāraṅga* (*Cucculus melanoleucus*), *kuraṅga* (antelope), *eṇa* (black deer, *Antilope cervicapra*), *kapiñjala* (grey partridge, *Perdix cinerea*), *mayūra* (pea-fowl, *Pavo cristatus*), *varmī* (*Rita rita*), and *kūrma* (turtles, tortoises) among all flesh foods.

(iii) *Dāḍima* (pomegranate), *āmalaka* (*Emblic myrobalan*), *drākṣā* (grapes, *Vitis vinifera*), *kharjura* (dates, *Phoenix sylvetris*), *parūṣaka* (*Grewia asiatica*), *rājadāna* (*Mimusops hexandra*), and *mātuluṅga* (*Citrus medica*) among fruits.

(iv) *Vāstuka* (white goose-foot, white variety of *Chenopodium album*), *cuccu*, (a species of *Conchorus*), *satīna* (a kind of peas, *Pisum sativum*), *cillī* (goose-foot, *Chenopodium album*), *mūlakapotika* (young radish), *maṇḍukaparṇī* (penny-wort, *Hydrocotyle asiatica*), and *jīvantī* (swallow-wort, *Dendrobium macrei*) among all vegetable foods.

(v) Cow's milk and its products in the class of milks and milk products.

(vi) Rock-salt among all edible salts.

The text further includes :

(i) *Dhātrī* (*Emblic myrobalan*) and *dāḍima* (pomegranate, *Prunica granatum*) among all acid fruits.

(ii) *Pippalī* (long pepper, *Piper longum*) and *nāgara* (dry ginger) among all pungent foods.

(iii) *Paṭola* (wild snake-gourd or pulbul, *Trichosanthus dioicia*) and *vartaka* (brinjal or egg-plant, *Solanum melongena*) among all bitter vegetables.

(iv) Honey and clarified butter among all substances that have a sweet (agreeable) taste and digestion.

(v) Crystallized cane-sugar among all varieties of sugars and sugar products.

Detailed descriptions are also given for the correct preparation of various dishes, and for the ingredients which are tasteful and most nutritious in each case. Among cooked preparations are included :

(i) Various types of *maṇḍa* (thick creamy preparations).

(ii) Gruels and soups of rice, vegetables, spices, etc.

(iii) Meat, cooked with clarified butter, curd, acid fruits, condiments and spices; thick or thin soup of meat, prepared with spices, salts, etc.; minced-meat; fried meat; meat-balls; meat-cakes; roasted meat; spiced steaks roasted over charcoal; varieties of preparation with gravy; meat-paste; sweet-meat dishes containing honey.

(iv) Soups containing pulses, lentils, spices, etc.

(v) Sweet preparations made of rice, barley, curd, sugar, raisins and acid fruits.

(vi) Acid juices sweetened, scented, and flavoured.

(vii) Confections prepared with milk-preparations as the main ingredient.

(viii) Confections prepared with cereals as the main ingredients.

(ix) Various types of alcoholic beverages, taken after meals as an aid to digestion.

Detailed directions are given about the vessels in which food should be cooked and served. Food should be cooked in clean places by reliable and expert cooks, and taken in clean and congenial surroundings and in proper order. Long walks, long discussions, singing, reading, etc. are not recommended after meals as they may provoke the body humours.

The nature, quantity, and cooking of food should depend upon appetite, relish, and season. Food, containing a fair amount of liquid ingredients, and taken neither too slowly nor too fast, is most easily digested. While heavy and too-frequent meals impair digestion and health, insufficient food also weakens the body. Rest, light walks, enjoyable occupations not requiring physical exercise, and light sleep are beneficial for digestion. All meals should contain many ingredients of different tastes, but incompatible foods should not be included in a single meal. Cold water should be drunk after all meals as it counteracts deranged *pitta* and helps the food in the stomach to be in a semi-liquid and easily digestible condition (*Sū*. **46**).

B. Food Value of Different Edible and Potable Substances; and Their Uses in Health and Diseases

Drugs and plants, which are taken by women, and female animals, namely, cow, she-goat, she-camel, ewe, she-buffalo, mare, and she-elephant are transformed into white fluid essence, called milk. Milk is a supreme article of food among all nutritive substances (*prāṇada*), and is heavy, sweet, slimy, cold, bland, emollient, laxative, and mild in its action on the body. The properties of milk are similar to those of the essential life fluids of all living creatures, and hence its use is not prohibited in any normal and deranged conditions of *vāyu*, *pitta*, blood, and mind, or in fever, cough, wasting diseases, constipation, female diseases and many other major and minor ailments. It is a tonic, rejuvenating and roborant substance. It is a complete food for the growth and maintenance of the body as well as of the mind, and hence the best diet for infants, old people, diseased persons, and convalescents. Among the potable milks, that of the cow has a stabilizing action on body secretions; that of the goat is beneficial for consumptives; that of the camel is curative of oedema, glandular swellings, piles, and leprosy; that of the ewe is beneficial in *vāyu* disorders, but aggravates the other humours; that of the buffalo contains more fatty matter than cow's milk, is more cooling and heavy, and hence impairs digestion;

that of the uni-hoofed (*ekaśapha*) animals, like, mare is curative of some types of rheumatism; human milk is specially vitalizing and also beneficial as a local application in eye diseases; elephant's milk improves eyesight.

The milk milched directly from the animal in the evening is more easily digested than that of the morning. All milks, except human, are more beneficial when warmed after milking; but prolonged boiling makes them heavier and richer in fat content. Discoloured, acid, curdled, saline or foetid smelling milk should always be avoided (*Sū* **45**, 44-57).

Curds (sourmilk—*dadhi*) are of three types, viz. sweetened (*madhura*), slightly acidic (*amla*) and strongly acidic (*atyamla*), all of which are heat-producing, vitalizing and curative of catarrh, fever, dysentery, indigestion, and urinary disorders; but sweetened curd increases body-fat and the secretion of *kapha;* slightly acid curd deranged *pitta* and *kapha;* and strongly acid curd vitiates the blood. Curd which has not set properly (*mandajāta*) is strongly purgative and diuretic, and deranges all the three humours. Like the milks of different animals, the corresponding curds have similar physiological actions. Curds from full-cream milk (*saradadhi*), curds from concentrated milk (*śṛtakṣīrabhava*), curds from skimmed milk (*asāradadhi*)—all these are included in the classification of curds. Their specific actions on the body are also described (*Sū.* **45**, 58-76).

Diluted curd prepared from skimmed milk (*takra*) is light, appetizing, heat-producing, and digestive. It removes excess of fatty matter from the body and relieves conditions due to excessive intake of fats and emollient substances, and cures many ailments. Diluted curd from full-cream milk is called *ghola.* The addition of sugar, salt, potassium carbonate (*yavakṣāra*), or of alkaline drugs (*vyoṣa*) to *takra* is prescribed for specific disorders of the humours (*Sū.* **45**, 77-81).

Butter (*navanīta*), when fresh, is light and appetizing. It improves memory, intellectual capacity and physical strength, and is effective in disorders of *vāyu* and of *pitta,* consumption, ulcers, piles, etc. Butter, not very fresh, has fat content and is conducive to growing children. Butter made from thickened milk is very valuable in defective eyesight and eye diseases. Cream (*santānikā*) has also many desirable properties (*Sū.* **45**, 82-84).

Clarified butter (*ghṛta*) is cooling, lubricating, appetizing, vitalizing, rejuvenating, diuretic, and heavy; it improves memory, intelligence, complexion, voice, personal beauty and charm, potency (*ojas*), eyesight, and longevity. It is beneficial in insanity, epilepsy, chronic fever, constipation, and all disorders of *kapha* and *pitta.* According to their origin from various types of milk, different types of clarified butter shows specific and valuable curative properties in other ailments also. Clarified butter from thickened milk (*kṣīraghṛta*), the thick upper layer of condensation from boiling butter (*ghṛtamaṇḍa*), clarified butter preserved for eleven to one hundred years in a pitcher (*kumbhaghṛta*), and that matured for more than a century (*mahāghṛta*), are all said to have specific curative and tonic properties (*Sū.* **45**, 84-97).

Vegetable oil (*taila*) are useful for cooking. They are beneficial when applied to the eyes, ears, or skin. More than sixty types of oil-seeds are named in the text, and the properties of the different oils are described; but that from sesamum (*tila*)

is declared to be the best of all. The text also states that oils from all other seeds, even if not mentioned in the text, have comparable and generally valuable effects on human system.

Among the animal fats named, are clarified butters from milk (*ghṛta*), lard (*vasā*), fatty tissues (*meda*), and bone-marrow (*majjā*). They differ in properties according to the habitats and species of the animals, e.g. domesticated, amphibious, avian, etc. (*Sū.* **45**, 98-117).

Honey is sweet, cold, tonic, light, palatable, slimy, antitoxic, and pervasive. It is used as a vehicle for drugs, and is beneficial to the stomach, skin, general appearance, and eyes. Honey is an antidote to all deranged humours, ulcers, obesity, urinary disorders, dysentery, and worms. Eight types of honey are listed according to their sources, each with specific properties. Fresh honey, old matured honey, and thickened honey also have different beneficial actions, but thin immature honey is harmful. Honey becomes highly injurious if heated, boiled, or even diluted with water. For this reason, honey remaining undigested in the stomach, where it comes into contact with water and heat, turns into poison. This special property of honey is due to the fact that it is not generally collected by insects from a single source, but from the flowers, fruits, etc. of different plants (*Sū.* **45**, 118-136).

Sugar-cane juice is sweet, heavy, cool, strengthening, digestive, and diuretic. It cures haemoptysis and intestinal worms, Sugar-cane can be of twelve different species (See Table No III), and the juice of each has specific merits. Raw cane-sugar juice and its various derivatives also have specific properties (*Sū.* **45**, 137-154).

Wines and fermented liquors are appetizing, heating, exhilarating, diuretic, and mildly purgative. They subdue deranged *vāyu* and *kapha*, and stimulate the sense-organs. More than thirty types having different source-materials and method of preparation have been cited. Each has got its own specific physiological actions (*Sū.* **45**, 155-200).

Urines of different animals are also recommended for use as purifying and appetizing agents, cardiac stimulants and for many other purposes. Each type of urine has its own specific actions (*Sū.* **45**, 201-212).

The potable liquid that is obtained from the atmosphere (*antarikṣa pānīya)* is tasteless, but life-giving in property. It is not only essential for life, but is also the best of all known drinks. It sustains the body and supplies its liquid constituents. It gives satisfaction to the mind, and relieves fatigue, lassitude, thirst, excitement, vertigo, torpor, drowsiness, and heat (*Sū.* **45**, 2).

The properties of this liquid are changed when it falls to the surface of the earth and appears in rivers and tributaries (*nadī-nada*), tanks and ponds (*sara-taḍāga-vāpī*), different types of wells (*kūpa, cuṇṭī*), natural springs (*prasravaṇa*), fountains (*udbhida*), subsoil flows (*vikira*), or marshes and swamps (*palvala).* It then acquires one or more of the different tastes which lessens its beneficial action. Hence, atmospheric water is best for drinking. When this is not available, water almost free from any taste, obtained from a porous soil, should be used (*Sū.* **45**, 3, 4).

Atmospheric water is of four types. Rain water is the best of all, owing to its lightness; it may be of two different kinds according to the origin of the clouds

from which it is obtained, namely, riparian and oceanic. Rain water for drinking purpose should be collected by means of a large piece of white and absolutely clean cloth, hung up in the open air, or collected from the rain spouts of a building after rejecting the first portion, carefully filtered. It should be stored in a closed and clean container made of gold, silver, or baked clay.

Dew, frost (*tuṣāra*), rain and snow or ice are other examples of atmospheric water (*Sū.* 45, 5).

Excrements of human beings and animals, insects and worms and their eggs, carcases of dead creatures, decomposed animal matter, aquatic plants, dead leaves, and all other poisonous matter contaminate surface water and render it unfit for drinking and bathing. The first fraction of water, collected from rain spouts, is similarly harmful, and causes diseases and afflictions of the skin (*Sū.* 45, 6).

All surface waters, which are covered with plant-growth or moss, or not exposed to currents of fresh air, sunlight or moonlight, or are turbid, or have a perceptible smell, colour or taste, should be considered harmful. Such waters may suffer pollution, detectable by sight, taste, smell, loss of potency, or its abnormal action. The type of pollution, which is detectable by touch, may be hardness, soapiness, unusual warmth, and producing shivering sensation. The type of pollution, visually detectable, may be colour, muddiness, presence of moss and dust particles; that detectable by the tongue is the presence of any perceptible taste; and that detectable by smell is indicated by any odour present. Water, which fails to quench thirst or causes a sense of heaviness, intestinal pain and secretion of *kapha*, may be said to have lost its potency (*vīryadoṣa*). Polluted waters can be purified by boiling, prolonged exposure to the heat of the sun, or by contact with red hot iron or heated sand. Such purified samples of water should be scented by pleasant smelling flowers and drunk from a container made of gold, silver, copper, bell-metal, or earthenware. Drinking water should be collected in the morning when the atmosphere is cool and clear, and kept cool by any one of the following methods; exposing the pitcher to cool air, immersing the pitcher neck-deep in cold water, agitating the water with a stick, fanning the surface, passing it repeatedly through a clean cloth, putting clean sand into it, or keeping the pitcher suspended from a hook or peg. Water is beneficial only when cold (*Sū.* 45, 7-12).

Waters of certain localities are usually unwholesome. Water of rivers, flowing through marshy areas, induces cold; water from certain mountainous and hilly regions may cause skin diseases, dermatitis, jaundice, intestinal worms, dropsy, elephantiasis, heart diseases, head diseases, or goitre; water flowing through certain plain regions may cause piles. The water of barren lands has a bitter saline taste; water from marshes and swamps, and water collected from open fields aggravate one or more of the humours; sea-water has a fishy smell and bad saline taste, and quickly causes derangement of all the three humours (*Sū.*45, 14).

The use of cold water should be avoided in cases of chest pains, catarrh, rheumatism, throat diseases, formation of gas in stomach, high fever, and hiccup. It should also be avoided after administration of emetics, purgatives, or just after taking of oily or fatty drink. Patients, suffering from deranged *vāyu*, excessive

kapha secretions, excessive fat, lack of appetite, insufficient formation of urine, and chronic fevers, are benefited by warm water (*Sū*. **45**, 21, 37).

Water from any source, boiled down to a smaller volume, cooled and filtered until absolutely clear, has all the properties of pure water and can be used safely in all cases. But it should not be kept boiling overnight, as it becomes acid in taste, productive of mucus, and generally injurious (*Sū*. **45**, 37-39).

The water found inside the coconut is cooling, tasteful, pleasant, appetizing diuretic, invigorating, and subdues deranged *pitta* (*Sū*. **45**, 42).

The quantity of drinking water allowed to a person, suffering from loss of appetite, catarrh, oedema, wasting diseases, dropsy, skin diseases, eye diseases, fever, ulcer, diabetes, etc., should be reduced to the minimum (*Sū*. **45**, 43).

Specific diets for many ailments have been prescribed in the text. A few interesting instances are worthy of record.

Barley water (*yavāgū*), prepared according to directions (*Utt*. **32**, 59, 63) has been prescribed for patients suffering from fever with thirst and for those with impaired digestion. Boiled rice, with lightly seasoned meat-soups, has been recommended for patients suffering from slight fever, or convalescing from high fever, or for people after a period of fasting or excessive fatigue. A soup prepared from *mudga* (green gram) is to replace the meat if the fever is originated from derangement of *kapha* and *pitta*. Acid juices of *dāḍima* (pomegranate) and *āmalaka* (*Emblic myrobalan*), soups prepared with tender *mūlaka* (radish), *paṭola* (pulbul), and *nimba* (margosa), are also prescribed in fever. Powdered parched corn (*lāja*) suspended in water and sweetened with honey or sugar, barley water mixed with matured wine, and butter-milk mixed with bitter juices are prescribed for debility, thirst, and loss of appetite in fevers (*Utt*. **39**, 56-61).

Milk is forbidden in acute stages of fever, but is recommended for chronic and lingering cases which cause emaciation, mental depression and general weakness (*Utt*. **39**, 63). Milk is declared to be as valuable as ambrosia (*amṛta*) in dysentery cases; but for chronic dysentery, milk should be diluted with thrice its volume of water and then throughly boiled (*Utt*. **40**, 56). Barley water acidified with acid fruit juices, and *mudga* soup are also beneficial in dysentery (*Utt*. **40**, 66, 92). Clarified butter is considered an essential article of diet for wasting diseases and in convalescence from all diseases. An unusual diet consisting of the flesh of crow, vulture, mongoose, cat, cormorants, or beasts of prey (lions, tigers, wolf, hyena, etc.), fried in mustard oil, is prescribed for consumptive patients. The flesh of camel, ass, elephant, mule, horse, or herbivorous animals of forest lands is also recommended in such cases (*Utt*. **41**, 23). Clarified butter cooked with meat juice of such animals, barley water prepared with alkaline powders (or cow's urine), and soups made from venison or from rabbit flesh, are recommended for patients suffering from jaundice (*Utt*. **44**, 32). Milk, soups prepared from the flesh of herbivorous animals, and soups of light cereals and tender vegetables, are prescribed for haemorrhage (*Utt*. **45**, 12) and for vomiting (*Utt*. **49**, 13). Lukewarm barley water, sweetened and diluted goat's milk, and the flesh of porcupine, lizard, bear, and wild cats, are recommended for patients with chronic hiccup (*Utt*. **50**, 14. 17). Juice extracted from the flesh of chicken and of

various types of pigeons and wild-fowls, with large quantities of acid juices, strongly salted and cooked with clarified butter, or the head of a deer cooked with cereal soup, is prescribed for asthma (*Utt.* **51**, 24).

A patient suffering from intestinal worms is forbidden from using of milk, meat, butter, clarified butter, pot-herbs, curds, and all substances with sweet or acid taste (*Utt.* **45**, 18). The diet of dyspeptic patients should consist largely of fruits, cooked vegetable roots, tasteful beverages, and sweetmeats containing acid juices; a long term treatment with gradual use of articles, having all the different tastes, is also recommended for the purpose (Utt. **57**, 13). In the case of sick, convalescent and weak patients, food should be taken in a light or empty stomach and after attending nature's calls.

A comprehensive list of the dietetic values and physiological actions of different types of flesh is found in the text (*Sū.* **46**), and has been incorporated in Table I of this work. The use of dried or decomposed meat and of the flesh of new born, senile, diseased, wasted, poisoned, snake-bitten, or unnaturally-fed creatures is forbidden, as they are injurious to the system. Males are considered superior in food value among birds, and females among quadrupeds. Among the body elements blood is easier to digest than flesh, whereas fat, bones, marrow, etc. are progressively heavier. Of the different parts of an animal, the flesh around the liver is considered the most nutritious, followed by that of the thighs, shoulders and loins; the other parts are less easily digested, the skin, kidneys, liver, and intestines being the heaviest. In a bird, the head and the breast are heavier to digest than the other parts (*Sū.* **46**' 129-140).

VIII

HEALTH AND LONGEVITY

A. Hygienic Rules

In an earlier chapter, it has been explained that prevention of diseases is as much an aim of Āyurveda as the curative remedial measures. The entire twenty-fourth chapter of the *Cikitsāsthāna* is devoted to measures for keeping the body resistant *(anāgata pratiṣedha)* to diseases.

The daily routine should begin with brushing the teeth, using a dentifrice compounded of honey, powdered drugs of astringent properties, fragrant ingredients, rock-salt, and vegetable oil. This dentifrice should be applied by a stick of *nimba* or similar plant, containing bitter and astringent properties, which has been crushed at one end to facilitate brushing. Such cleaning deodorises the mouth and breath, and brings appetite and mental cheerfulness. A coated tongue should be scraped with a golden, silver, or wooden scraper. Gargling with medicated oils produces results similar to brushing. Washing the face and eyes with liberal quantities of cold water, or with decoction of plant barks having milky juice, improves eyesight and prevents skin-blemishes. For the proper care of eyes, the use of collyrium on the eyelids, morning and evening, is recommended *(Ci.***24**, 3-11).

Regular physical exercise is one of the best methods, creating resistance to diseases and guarding against physical decay. The amount of exercise should be governed by age, strength, and general physical condition. Seasonal and geographical conditions are also important considerations. In a country with a cold climate, or in the cold season of the year in more temperate climates, regular physical exercise is an absolute necessity for healthy persons *(Ci* **24,** 24-25).

The text is careful to point out the possible serious consequences of over-exercise or of physical exercise when the body actually requires rest. Exercise is harmful when a person is feeling indisposed or actually ill, or just after a full meal, or any activity which drains the body of energy. Even for a healthy person, exercise should be discontinued as soon as the breathing becomes laboured, as there is a gradual loss of the vital element *(prāṇa vāyu)* beyond this stage. Hence all over exercise is harmful. As a general guidance, Suśruta directs that the duration of the period of exercise should be limited to half the time that brings physical exhaustion. There should also be a definite time in the day for taking such exercise. Such regular, adequate and proper exercise develops the muscles all over the body, removes unwanted fat, improves the general appearance and complexion, gives greater digestive power, endurance, resistance to changes of temperature and resistance to diseases. It also gives the desirable mental qualities of alertness, retentive memory, and keen intelligence *(Ci.* **24,** 25-27).

Physical exercise should be followed by a period of rest and then by rubbing a vegetable oil all over the body *(abhyaṅga).* This increases the benefits of exercise, guards against derangements of the bodily humours and *dhātus,* and keeps the skin free from blemishes. Massaging the head and face with oil is also recommended in order to prevent formation of wrinkles on the face and for invigorating the reproductive system. It also helps in the growth of thick, soft, and luxuriant hair on the head, when followed by careful combing to remove dirt, dandruff and parasites. Prescriptions of medicated oils, to act as hair-tonics, are given in the text. The ears also should be irrigated with oil in order to prevent ear-ache and other affections of the ears. These practices invigorate not only the local areas, but also the whole system as the oils are absorbed by the capillaries, located all over the surface of the body and conveyed to the general system *(Ci.* **24,** 13-23).

Affusion *(seka)* removes pain and fatigue. It counteracts deranged *vāyu.* Massage *(udvartana)* removes excess fat, counteracts deranged *kapha,* and benefits the skins and muscles. Massage can be applied with or without mechanical aids and appliances. Massage with an uplifting and raising motion *(utsādana)* is of special benefit to women, as it gives brightness to the skin, improves the bodily contours by making the muscles firm, and generally makes the body beautiful. Frictional massage *(udgharṣaṇa)* dilates the skin-pores, causes a temporary rise of skin-temperature and thus benefit the skin. The benefits of such friction massage are greater if finely powdered burnt-clay is used as a rubbing powder. This treatment prevents itches, rashes, and eruptions. In order to prevent sciatica, stiffness of local muscles, and faulty elimination, massage of the thighs and pelvic area with an instrument fitted with small wooden rollers *(phenaka)* is recommended *(Ci.* **24,** 18-20, 28-32).

Bathing in cool water relieves sense of heat, fatigue, itching, and counteracts perspiration and drowsiness. Bathing also cleans the skin from dirt and impurities, gives a feeling of freshness to the body, mind and sense-organs, purifies the blood, improves eyesight, and increases appetite and seminal secretions. Humoral derangement of *vāyu* and *kapha* follows the use of cold water in winter; the use of hot water in summer deranges *pitta* and blood. The head should always be washed with cold water, except when directed by the physician. Washing the head with warm water is beneficial in certain forms of deranged *vāyu* and *kapha.* The use of cold water on the head and face improves eyesight; warm water has the opposite effect. Bathing is prohibited immediately after meals, in fevers, stomach troubles, affections of the ears, and when the *vāyu* is highly deranged. Washing the feet and hands gives the benefits of bathing, but to a lesser degree *(Ci.* **24**, 33-38, 45).

Shaving the hair and paring the nails makes a person feel light, energetic, and cheerful *(Ci.* **24**, 49). Use of scented pastes on the skin *(anulepana* and *ālepa)* gives vitality, good vision, beauty and a flawless complexion *(Ci.* **24**, 39-41). Chewing of betel-leaves, prepared with cloves, camphor, nutmeg, areca-nuts, and lime-paste, or with similar preparations, after a bath and meals cleanses and deodorises the mouth, checks excessive salivation, benefits the teeth, tongue and throat, and acts as tranquillizer (*hṛdya*) to the bodily system *(Ci.* **24**, 12). The most important hygienic measures, the use of proper food and correct eating habits have been discussed in a separate branch of medical knowledge, known as dietetics (*āhāratattva*).

Shoes are essential for walking out of doors. Apart from protecting the feet from external injuries, they give comfort, vitality, good eyesight, and sexual potency. Umbrellas have similar effects, apart from giving protection from sun and rain. The head should be protected by a turban *(uṣṇīṣa),* which also helps growth of hair and improves mental faculties. Proper clothes and armour *(vāṇavāra)* protect the body and improve strength and complexion. The use of large and stout walking sticks *(daṇḍas)* give protection and self-confidence to the weak and infirm, conserves energy and strength, and increases patience and boldness *(Ci.* **24**, 47-53).

Walking serves as an aid to longevity, improves digestion and bodily strength, and gives keenness to the mind and the senses. Strenuous walks reduce fat and check excessive secretion of *kapha,* but fatiguing walks may cause weakness and emaciation. While walking, specially after nightfall, one should avoid rough and uneven grounds, areas covered with dirt, ashes, bones and other unclean matter, and places of cremation and burial. A sufficient period of rest is necessary after exercise and walking, as such rest removes mental tensions and benefits the system. But sedentary habits increase accumulation of *kapha* and bodily fat, and ultimately make the person weaker (*Ci.* **24**, 54-60).

When natural ventilation is absent, hand fans should be used to prevent perspiration, fatigue, and sense of heat, all of which have harmful effects on the health. Living rooms and bedrooms should be so constructed as to have proper lighting and ventilation, and also to provide protection from strong winds and heat of the sun. Continued exposure to strong winds, direct sunlight, and the heat of a fire are always harmful. A soft bed is valuable not only for inducing restful sleep, but also for pro-

per growth of the body, for secretion of essential bodily fluids, and for maintenance of the bodily organs in healthy condition. A restful sleep increases physical vigour, digestion, keenness of the senses, and helps in balancing the bodily *dhātus* and *doṣas* (humours) (*Ci.* 24, 61-66).

Suśruta gives detailed directions for personal conduct. Some of these directions pertain to health, some to personal manners and speech, while others advise against hazardous activities. One should neither stare directly at the sun for any length of time, nor look steadily on a strongly luminous or revolving body, nor blow out a fire by forcible breathing, nor repress the natural urges of the body, nor jump on to a sheet of water or to the ground unless in a proper posture. One should not commit any nuisance near ponds, rivers, reservoirs of water or any public place. Yawning, sneezing, retching, or coughing without previously covering the mouth with the hand is forbidden while in company of others. Fingering or scratching any orifice of the body is forbidden even when no one else is present. Postures in sitting, reclining, and specially when sitting down to meals, should be such that the neck and backbone are not bent or cramped. Carrying a heavy load on the head is also forbidden. Even ordinary activities like walking, running, jumping, swimming, diving, riding, bathing, laughing, sleeping, resting, etc. should not be continued for unusually prolonged periods (*Ci.* 24, 68-74).

Even if one has unfortunately got into habits which are contrary to the above directions, or is self-indulgent in any form, he should discontinue such habits in graduated steps extending over a period of time. Among forbidden practices are included: lying down with the head at a lower level than the body; taking food or drinking water from dirty, or soiled, or broken vessels, or with unclean hands; eating food provided by roadside inns, or by a woman of the street; taking food which has been exposed to insects, or which has an unpleasant appearance or smell; drinking water in excessive quantities at a time, specially during the rainy season; wearing clothes or shoes used by another person; worrying about possible diseases or calamities; excessive use of alcoholic drinks; sexual excesses or perversions. A long list of taboos on the subject of personal conduct for men and women in different climates, and of different ages and stations of life, is given in the text. The breach of these taboos is said to lead to physical and mental diseases (*Ci.* 24, 74-89).

B. Care of Eyesight

Some interesting prophylactic measures for ensuring eye health and for good eyesight in old age, are found in the text. They are described below.

Tarpaṇa (flushing). The patient lies down in a chamber free from floating dust-particles. A thick paste of powdered *māṣa* pulse (black gram) is applied around the eyes in the form of a circular band, and allowed to harden. The eyes are then scrupulously cleansed, rinsed, and fomented. A quantity of the clear supernatant liquid of clarified butter, emulsified with an equal quantity of slightly warmed water, is poured into the cup formed by the dried paste, until the eyelashes are submerged in the liquid. The patient keeps his eyes open, and retains the liquid for the period of time required to count upto a minimum of five hundred and a maximum of thousand,

depending upon his health and physique. After removal of this application, the patient smokes a pipe using a mixture of powdered drugs of *kapha*-subduing power. This process is repeated daily upto a maximum of five days. This treatment ensures prolonged eye health, visual acuity, and amelioration of most eye diseases at their early stages; it also ensures instantaneous sleep on going to bed and instantaneous wakefulness at the end of sleep. Excessive and defective uses of this method are however followed by harmful results *(Utt.* **18,** 4-5).

Puṭapāka (application of emulsions containing extracts of proteins). In this case, the method of application is the same as in *tarpaṇa*. Various types of *puṭapāka* emulsions are recommended: (i) The *snehana* (oil-base) emulsion is used when organ of vision appears dried, and is prepared from clarified butter, the flesh, lard, fatty tissues or bone-marrow of aquatic creatures, and drugs of the *madhura* (sweet) group. It should be retained in the eyes as long as it takes to utter two hundred syllables. The *snehana puṭapāka* should be repeated on the next day and then discontinued. (ii) *Lekhana* (scraping) *puṭapāka* consists of a mixture of flesh and liver of a *jāṅgala* animal, or of a vegetable drug with scraping properties, or of powders of black iron, copper, conch-shell, coral, rock-salt *(saindhava)*, *samudraphena* (cuttle-fish bone), *kāsīsa* (sulphate of iron), *srotoja* (sulphide of antimony), and cream of curd made into a paste. The diseased part of the eye is exposed to the action of this *puṭapāka* for a period required for counting one hundred. (iii) *Ropaṇa* (healing) *puṭapāka* is prepared by heating a mixture of the flesh of a *jāṅgala* animal, breast milk, honey, clarified butter, and a bitter vegetable drug. This is allowed to remain in contest with the affected eye for a period required for uttering three hundred syllables, or counting three hundred. The ingredients of such preparations are first pasted into a ball of semi-solid matter and then covered with leaves of plantain tree or of castor oil plant, or the large leaves of one of the varieties of waterlily. This in its turn is coated thickly with a layer of clay, then dried and baked in a fire prepared with the charcoal of catechu or of any resin-exuding tree, or with dried cowdung cakes. When well-baked, the clay ball is allowed to cool and then broken, and the liquid contents shaken out. This fluid extract is afterwards applied either cold or slightly warm.

The *puṭapāka* is a potent treatment and requires a long preparatory period of proper diet and conduct *(Utt.* **18,** 11-19).

Āścyotana and seka (application of medicated eye-drops). This is employed in cases of eruptions and inflammations of the eyes and applied in the manner already described. This resembles the *snehana, lekhana* and *ropaṇa* types of application and is prescribed for specific types of eye affections. The compositions are not described in the text, but ten, eight, and twelve drops are respectively recommended for the three cases. The period of application is twice that of the corresponding *puṭapāka* applications *(Utt.* **18,** 22-23).

Añjanas (collyriums of various compositions). They are recommended generally for elimination of deranged humours accumulated in the eyes and particularly for dehumidifying, healing, and invigorating the eyes. The application should be made in the morning, afternoon, or night, depending upon the nature of the affliction, the type of collyrium employed and the season. Such collyriums should be stored in suitable gold, silver, copper, bell-metal, iron, or horn vessels, or vessels made from precious

stones, according to their compositions, and applied on the eyelids with slender rods terminating in bud-shaped balls, made of gold, copper, precious stones, horn, or bone. The fingers can be used for applying collyrium to the outer surfaces of the eyelids. The application should be washed off when there is relief of the diseased condition (*Utt.* **18**, 26, 33-34).

C. The Three Ages of Man

Human life, according to Suśruta, is marked by three distinct periods of growth, prime, and decay. Unless terminated by disease or accident, death should not take place until a considerable time after the seventieth year at which old age is supposed to begin in normal individuals. The three ages of man are :

(i) Childhood (*bālya*), beginning with birth and ending at sixteen years of age, is a period of physical and intellectual growth.

(ii) Maturity (*madhya*), beginning with the termination of childhood and extending upto the seventieth year. This period comprises a period of physical growth upto the twentieth, youth upto the thirtieth year and then a peak period of full and unabated maturity upto the fortieth year, during which period physical strength, sensory perceptions, bodily functions and the vital elements remain unimpaired. The period from the fortieth year to the seventieth year shows a gradual physical decay which finally terminates in old age. The mental faculties, however, remain unimpaired.

(iii) Senility (*vṛddha*), beginning after seventy and ending with death. In this period, strength, energy, virility, sense-perceptions and the bodily functions, as well as the organs and components of the body, deteriorate from day to day. The hair gradually turns gray and sparse; the skin becomes dry, wrinkled and folded; the respiration becomes difficult, painful and attended by fits of coughing; the body becomes gradually incapable of doing any useful work, and even carrying out its natural functions until death terminates all (*Sū.* **35,** 26-28).

D. Anatomical Features and Physiological Characteristics In Relation to Longevity

According to Suśruta, people with certain physiological characteristics are destined to live long. When they are attacked by diseases, they have a greater innate ability to recover than the other people. Hence physicians can treat such patients with every expectation of success. These features are: disproportionately long fingers, arms, toes and legs; unusually large sides, backs, nipples, shoulders, face, forehead, teeth, and eyes; broad chests with well-separated chest muscles; disproportionately short necks, thighs, and generative organs; deep umbilical cavity; broad, fleshy, and hairy external ears; deep inspirations while breathing, and deep voice. All these, individually or collectively, are indicative of longevity. If sandalwood paste is found to dry rapidly on the face of a person but slowly over the chest, the person is expected to enjoy a long life beyond seventy years (*Sū.* **35**, 3-4).

Persons with fleshy and hairy legs and ears, a little up turned nose-tip, and with lining of their lower eyelids characterized by two or three well-defined lines are expected to have a life of medium length of about seventy years (*Sū.* **35**, 5).

On the contrary, even a young person with short phalanges of fingers and toes, narrow back, abnormally prominent external ears, large generative organ, prominent nose, chest covered with ringlets of curly hair, gums exposed while talking, or eyes with a tendency to roll from side to side in laughing or talking, has a lesser life expectancy. If a number of these features are found in the same person, that person is destined to have a short life, extending beyond twenty-five years (*Sū.* **35, 6**).

Whether any limb is too large or too short is determined from a reference to the correct anatomical proportions of normal healthy individuals (belonging neither to the long-lived, nor short-lived categories) who have attained maturity. The dimensions given in the text for such standard persons are based on the measurements in terms of their own digital breadth as unit, so that short as well as tall persons may have correct proportions to their stature. A man of twenty-five or a woman of sixteen is said to have attained maturity. The actual values of such measurements for various anatomical parts of the human body are given in the text (*Sū.* **35**, 7-10). This shows that Suśruta was not unware of the elementary ideas of anthropometry and its significance in medicine.

Sattvasāra (having illumined intelligence) persons are generally the longest-lived. This rare type is recognised by the fact that the *rasas* in their bodies are harmoniously developed, and they possess keen memory, intelligence, courage, purity of thought, devotion to gods and revered persons, high ideals in life, and natural cleanliness of habits. All other persons have one or the other *rasa* in excess and belong to other types, depending upon the particular *rasa* in preponderance. *Śukrasāra* (semen-preponderant) persons have glossy white teeth and finger-nails; are sexually inclined and are prolific in their reproductive power. *Majjāsāra* (marrow-preponderant) persons have thin, sinewy bodies, remarkable strength, deep resonant voice, large and handsome eyes, and a natural ability to succeed in all undertakings. *Asthisāra* (bone-preponderant) persons have large heads, broad shoulders, firm teeth, big bones, prominent cheek-bones, and firm, large finger-nails. *Medasāra* (fat-preponderant) persons have large and bulky bodies, the inability to endure prolonged physical exertion and fatigue, soft and melodious voice, and cold perspiration and urine. *Māṃsasāra* (flesh-preponderant) persons have erect and upright features, deep-set bones, and joints embedded in thick layers of flesh. *Raktasāra* (blood-preponderant) persons are characterized by having their finger-nails, eyes, tongue, palate, lips, palms, and soles of feet, all unusually reddish and bright. *Tvaksāra* (skin-preponderant) persons have soft, smooth, and glossy skin and hair. These eight types differ markedly in respect of expectation of life as well as worldly success, a type lower in the list being always inferior to one preceding it. (*Sū.* **35**, 11).

A review of Suśruta's discussion on the influence of environmental factors on patients for treatment of diseases, provides evidence that he laid a special importance on treating the patients as a whole, body and mind together, and not the disease in isolation. This is what is now known as *medical anthropology*.

E. Rejuvenation and Longevity

The Āyurvedic physician did not consider his duty ended when the patient recovered from diseases or kept healthy. Suśruta prescribes quite a number of tonics.

aimed at maintaining the maximum of physical and mental vigour as long as possible and for prolonging the life-span. The observance of health, dietetic and hygienic rules are considered essential for the success of treatments, prescribed for longevity or rejuvenation. Suśruta gives an apt analogy between a dirty cloth and an uncared-for body. Just as the former cannot be expected to take a dye properly, a system, which is not in good conditions and has not been cleansed by emeties, purgatives and internal emollients, cannot be benefited by such tonics *(Ci.* **27,** 2).

Regular use of milk, pure and cold water, clarified butter and honey in childhood and early youth ensures a minimum of senile decay in later years. For adults, a list of drugs and articles of food with rejuvenating properties is given in the text. This list includes *viḍaṅga (Embelia ribes), yaṣṭimadhu* (liquorice, *Glycyrrhiza glabra), bhallātaka* (marking nut, *Semecarpus anacardium), āmalaka (Emblic myrobalan), guḍūcī (Tinospora cordifolia), atibalā (Sida rhombifolia), nāgabalā (Sida spinosa), vidārī (Batatas paniculata), śatāvarī (Asparagus recemosus), bījaka (Citrus medica), citraka (Plumbago zeylanica), agnimantha (Premna integrifolia),* seeds of the *kasmarya (Gmelina arborea),* the bulb of the *vārāhī* (a kind of *Dioscorea*), pulses of the *mudga* (green gram) and *māṣa* (black gram) varieties, boiled rice of *śāli* and other recommended varieties, thickened milk, honey, and clarified butter. The substances named above are said to be beneficial when consumed separately, but are also included in various prescriptions for rejuvenation and longevity, given in the text *(Ci.* **27,** 3-10).

The use of a salt-free diet as an adjunct to the rejuvenation treatment is repeatedly mentioned in the text. Persons seeking keen eyesight or longevity are also forbidden from the use of salt in the diet for prolonged periods *(Ci.* **27,** 5, 6, 10).

A remarkable preparation, named *viḍaṅgataila,* is supposed to eliminate all germs and parasites *(kṛmi)* living in the body, after two or three months of continuous use. When this tonic is continued in the fourth month, the existing hair, nails, and teeth fall off and the body of the patient appears aged and shrivelled. But from the fifth month, a new and resplendent body gradually replaces the old body; the senses becomes supersensitive to all external impressions and the mind becomes possessed of the illuminating principles of true knowledge *(sattva).* Everything that is heard or known is permanently impressed on the mind and the mental faculties become phenomenal. Old age and decay are held back for a very long time, provided, along with this treatment, the patient regularly anoints his body with *anutaila,* a medicinal oil of many ingredients, massages his body with a decoction of *ajakarṇa (Vateria indica),* bathes daily in well-water saturated with *ūṣara* (mineral salts), uses sandal paste on his body, and observes the rules of diet and conduct *(Ci.* **27,** 6).

Various brain tonics, supposed to give a highly retentive memory, keen intellect, and unimpaired intellectual vigour even in old age, are described in the text. They are also supposed to give robust health, increased resistance to diseases, physical vigour, and unusual longevity *(Ci.* **28,** 2-8). Gold, compounded with various drugs, honey, etc. in some prescriptions, is also said to have similar properties *(Ci.* **28,** 9-21).

The text however makes it clear, that living in cultured surrounding, constant study, and intellectual discussions with learned men should go hand in hand with the use of such tonics, in order to give the desired result for intellectual power, just observance of the rules of dietetics, correct physical and physiological habits, self-

control and proper medication are necessary in the case of the body *(Ci.* **28**, 22). The use of various preparations of the *soma* plant, described in the Vedas as well as an Āyurvedic treaties, along with such rejuvenating tonics, is supposed to ensure an extraordinary long and youthful life. The botanical descriptions and geographical habitats of twenty-four different varieties of the *soma* plant are given in the text *(Ci.* **29**, 4, 10-13). But unfortunately the *soma* plant has not been positively identified in modern times with any existing flora in India or elsewhere.

According to Suśruta, the *soma* plant is not unique in bestowing prolonged youth; physical and mental powers can be maintained in an unimpaired condition for very long periods by the use of certain drugs of all-healing potency, which are comparable to, but not equal to, *soma* in their powers. The beneficial action of these drugs is however negatived by intemperate habits, habitual laziness, over-indulgence, unwise actions, immortality, addiction to wine, and use of wrong and unapproved drugs. The names of eighteen drugs of such all-healing power are found in the text. Though their geographical distribution and botanical descriptions are given in the text, all of them cannot be identified with modern plants. The list includes *śvetakāpotī, kṛṣṇakāpotī, gonasī,* (possibly some *Arisaema* species), *vārāhī* (a kind of *Dioscorea*), *ajagarī, kanyā* (*Aloe indica*), *chatrā* (*Trichodesma indicum. atichatrā* (a variety of *Trichodesma indiçum*), *kareṇu, ajā* (*Saussurea gossipifolia*), *cakraka (Dolichos bilforus), ādityaparṇinī* (*Polanisia isosandra*), *brahmasuvarcalā* (*Herpestes monnieria*), *golomī* (white *dūrva grass*), *ajalomī* (a kind of fern plant), and *mahāvegavatī (Ci.* **30**, 4).

Certain religious and quasi-religious observances are prescribed for obtaining the full benefit of a course of *soma* or substitute drugs. They should be collected, prepared and compounded in the manner described in the text, so that their full potency remains unimpaired. The person seeking rejuvenation should first cleanse himself by emetics and purgatives and then segregate himself in a special chamber, and take daily one *kuḍava* measure (about 400 c.c) of the milky juice of the plant at one time. In other cases, pastes of twigs or branches, leaves, roots, thorns, or decoction of the entire plant, in cow's milk should be taken. He should attend to his duties, sit, stand, walk about, and converse with friends while remaining inside the chamber, but avoid sleep which is forbidden. In the first day he can take only cold water; boiled and cooled milk in the evenings of second, third and fourth days; milk in mornings and evenings on the fifth and sixth days; liquorice, sandal-wood paste, and milk from the seventh to the seventeenth day; gruels of boiled *śāli* rice and milk upto the twenty-fifth day; and boiled rice and milk thereafter. During this period remarkable physiological changes are said to occur. The patient vomits and purges out worm-infested matter and filth, long accumulated in the organism, upto the fourth day. In the next few days his muscles become withered and he looks like a living skeleton. From the eighth day onwards new muscles begin to grow, but the skin cracks, and teeth, nails and hair gradually fall off. From the tenth day, *anutaila* (mentioned earlier) is used to anoint the body and the skin grows firm; a new and perfect set of teeth appears on the seventeenth or eighteenth day; new nails fresh as a new-born child appear next; and lustrous hair and bright glowing skin are developed within the month. This new hair is shaved off and allowed to grow again after the application of a special hair tonic. The total course

takes three months. During the second and third month also the patient is kept under many restrictions which are removed only after the completion of the whole course. This treatment assures a prolonged life in the peak of physical vigour, personal beauty, and keenness of mind and senses (*Ci.* **29**, 5-7).

IX

DISEASES

A. Origin and Classification

Vyādhi (disease), according to Suśruta, is any condition which causes suffering to man. Diseases may be of four types according to their origin; *āgantuja* (extraneous), *śārīra* (internal), *mānasa* (mental), and *svābhāvika* (natural). The last type include: infirmity, senility, imbecility, and physical congenital deformities, etc. (*Sū.* **1**, 20).

Diseases of all types can be grouped under three headings according to their severity: *sādhya* (curable by treatment), *yāpya* (relievable by treatment), and *asādhya* or *pratyākhyeya* (not curable by treatment) (*Sū,* **10**, 6; **35**, 13). General paralysis, leprosy, piles, fistula, urinary calculi, abdominal dropsy, etc. belong to the last type (*Sū.* **33**, 2).

Sādhya diseases can be broadly classified into two types: curable by medical treatment alone; requiring surgical treatment.

While the former class can be cured by purely non-surgical methods, the latter may also require in most cases the use of drugs, purgatives, emetics, emollients, diaphoretics, etc. (*Sū.* **24**, 2).

As stated earlier all diseases result from the disturbance of bodily humour from their state of equilibrium. Humoral derangement can be caused by external factors, or by purely organic defects inside the body. Hence diseases have also been classified as *ādhyātmika* (proceeding from bodily or mental causes within one's self), *ādhibhautika* (created by causes existing in the physical and material environment of the body), and *ādhidaivika* (created by act of God, or by fate, or by malign influences like demons, curses, etc.) (*Sū.* **24**, 3). *Ādhyātmika* diseases have again been subdivided into three varieties:

Ādibalapravṛtta (caused by pre-conception hereditary factors). Diseases like leprosy, haemorrhoids, phthisis, etc. belong to this class and can be traced to inherent defects of either the father's spermatozoa or the mother's ovum.

Janmabalapravṛtta (caused by post-conception hereditary factors). Congential blindness, deafness, dumbness, nasal voice, cretinism, gigantic structure and similar malformations are caused either by deranged metabolism (*rasakṛta*) or by psychological disturbances (ungratified hankerings, gratification of improper longings or sinful conduct) of the pregnant mother.

Doṣabalapravṛtta (caused by deranged humours). A large variety of diseases are caused by improper conduct (*mithyācāra*) and improper diet (*mithyāhāra*) and consequent disturbances of the metabolic processes originating in the stomach or intestines, which result in deranged humours. Apart from these, mental or psychic disorders may be caused by deranged humours which have been provoked by imbalances of three fundamental *guṇas* (reals, or stuffs, or reality), *rajas* (energy stuff

with potentiality of doing work), and *sattva* (essence or intelligence-stuff with tendencies to conscious manifestation), *tamas* (matter-stuff or inertia with power of resistance).

Ādhibhautika diseases are of two kinds.

Saṃghātabalapravṛtta (traumatic). Diseases caused by blows, falls, physical encounters with antagonists of superior strength, attack from ferocious animals, and poisonous bites.

Kālabalapravṛtta (seasonal). Heat, humidity, seasonal changes, either in their natural manifestations or in abnormal forms, give rise to this class of maladies.

Ādhidaivika diseases are again of two kinds.

Daivabalapravṛtta (providential). Acts of God which affect a single person, e.g. lightning strokes, or which affect many persons simultaneously, e.g. epidemics, malignant influences of demons and monsters, curses, and charms and spells, which are described in the *Atharvaveda*, may bring about maladies of physical or mental in character.

Svabhāvabalapravṛtta (natural). Senility, death, hunger, thirst, sleep, etc. occur in their proper time (*kālakṛt*) even when persons strictly observe the rules of health and proper living. But in persons who do not follow proper rules of health and living, these manifestations are premature and irregular (*akālakṛt*). It is to be noted that these natural processes of the body are viewed as diseases by Suśruta (*Sū*. **24**, 4-8).

The visible and perceptible symptoms of diseases are caused by the interaction of the deranged body humours with the different *dhātus* (body-elements) and *malas* (waste products) in the different parts of the body. So diseases have also been classified as : *rasadoṣaja* (caused by vitiated lymphatic fluid), *raktadoṣaja* (caused by vitiated blood), *māṃsadoṣaja* (caused by vitiated flesh), *medadoṣaja* (caused by vitiated fatty matter), *asthidoṣaja* (caused by vitiated bony matter), *majjādoṣaja* (caused by vitiated bone-marrow), *śukradoṣaja* (caused by vitiated semen), *malāyatanadoṣaja* (caused by derangement of intestinal function), and *indriyadoṣaja* (caused by inadequate or excessive elimination) (*Sū*. **24,** 9).

According to Suśruta there are three stages in the development of a disease : *anyalakṣaṇa* (a preliminary stage serving as an indicator of the approaching primary disease), *prāk-kevala* (the primary stage or main disease), and *aupasargika* (the secondary stage, appearing as a symptom derived from the main disease). The latter develops during the course of the primary disease (*Sū*. **35**, 13-14).

B. Diagnosis of Diseases

The physician should direct his treatment to the cure of the disease diagnosed and also to alleviate its various symptoms. In some cases, the latter become so violent and harmful that it becomes necessary to check them first, as otherwise they may prove more harmful to the system than the disease itself (*Sū*. **35**, 14-15).

When called upon to attend a case, the physician should first examine the patient thoroughly with the help of all his sense-organs. He should observe the patient minutely,

carefully take note of all sounds or smell that might arise from any part of the patient's body, enquire about the history and symptoms of the patient's illusions, feel the affected parts with his hands, and even personally taste the patient's food and drink. Examination of urine and stool of the patient has also been recommended. He should specially examine the movement of *vāyu* inside the patient's body and search for possible internal bleeding, observe the skin-colour, feel the heat of the patient's body and his reaction to the touch, notice the build of the patient's body, and estimate his vitality and general resistance as well as his inherent longevity. Enquiries should be directed to the patient's usual place of residence, age, case history, time of aggravation of the symptoms of his illness, caste, habits, the diet he is used to, the food taken last, appetite, regularity and irregularity of body functions, and sleep. Only after acquiring a thorough knowledge of all the above factors should a physician prescribe the proper medicine and treatment. A physician has no moral or social obligation to undertake the responsibility of treating a patient who has been suffering from a disease lasting for more than a year, or a patient suffering from an incurable disease (*Sū.* **10,** 3-7).

It is also considered difficult to treat the following types of patients : Brahmins versed in the scriptures, high-ranking officers of the States, persons belonging to the royal family, infants, senile persons, timid and nervous persons, sly or cunning people, laymen with pretensions to a knowledge of medicine, secretive persons, persons lacking self-control, destitutes, and people without relatives and friends to look after them. Suśruta enjoins that physicians should avoid all close contact or intimacy with female patients (*Sū.* **10,** 7-8).

C. Symptoms of a Disease Indicating Imminent Death

Symptoms of approaching death in certain diseases are indicated by : excessive secretion of urine charged heavily with putrified matters from abscesses in cases of urinary disease (*prameha*) ; spontaneous bursting of sores, hoarseness, and bloodshot eyes in cases of leprosy (*kuṣṭha*) ; local swelling, excessive bleeding, dysentery, colic pain, aversion to solid food, and excessive thirst in cases of haemorrhoids (*arśa*) ; emission of flatus, stool, urine, semen or worms through the fistula opening in patients, suffering from anal fistula (*bhagandara*) ; oedema of the scrotum, retention of urine and local pains in cases of urinary gravel (*aśmarī*); still-birth (*mūḍhagarbha*) cases attended with extreme constriction of the opening of the uterus, or with birth-pangs felt at unusually early stages, or with rigidity of the vaginal passage, or with displacement and hardening of the placenta, or with vertigo and convulsions of the mother of a still-born child (*mūḍhagarbha*) ; rapid accumulation of water even after tapping, general oedema, pain in the sides, dysentery and aversion to food in cases of abdominal dropsy (*udara*) ; prolonged unconsciousness, inability to sit up, rigor, cardiac pains, bloodshot congested eyes, breathing through the mouth, rolling of eyeballs, laboured respiration, etc. in cases of fever (*jvara*) ; brilliant eyes, expiratory hiccups, shortness of breath (*ūrddhvaśvāsa*), and painful and excessive urination in cases of consumption (*yakṣmā*) ; laboured and painful breathing, colic pains, aversion to solid food, unquenchable thirst, anaemia, and sudden disappearance of the tumour in cases of abdominal

tumour (*gulma*) ; yellowness of teeth and nails, and of conjunctiva and yellow vision in cases of jaundice and chlorosis (*pāṇḍuroga*) ; vomiting of a large amount of blood, blood-red eyes, and blood-red vision in cases of haemoptysis (*raktapitta*) ; prolonged insomnia, and eyes always directed upwards or downwards, constant movement of the eyebrows, and unnatural oblique stares in cases of epilepsy (*apasmāra*) (*Sū.* **33**, 6-24).

D. Fundamental Principles of Āyurvedic Treatment

According to Suśruta, all treatments have five objectives and factors (*Sū.* **1**, 27) :

Puruṣa (the patient with a mind and body), for whom the treatment is intended;

Vyādhi (ailments, incidental to the actions of the three *doṣas* and blood) ;

Auṣadha (drugs, with specific physical properties, physiological actions, taste, potencies and efficacy, etc.), the material aids in treatment;

Kriyā (cultivation, collection, selection, processing, compounding, administration, auxiliary processes, surgical method, etc.), the processes necessary for treatment;

Kāla (seasonal and climatic factors, the time and frequency of medication or surgical treatment).

Medical and surgical treatments should not only be specific to the disease, but should also be governed by the above factors. There are, however, four common basic features in the treatment of all diseased and abnormal conditions. These are :

Saṃśodhana (cleansing processes)—eliminative or radical treatment;

Saṃśamana (pacification and tranquillization of deranged bodily humours) — sedative or conservative treatment;

Āhāra (proper diet);

Ācāra (correct conduct, observance of hygienic rules, and prescribed medical diet) — regiminal treatment (*Sū.* **1**, 21).

Āyurvedic treatment employs many auxiliary aids besides actual medication and surgery. These may be classified as : spiritual guidance; propitiatory measures for obtaining divine grace, exorcism against evil influences, proper selection of articles of diet; proper methods of cooking and preparation of beverages; first aid measures; social medicine; segregation from contaminating influences; sexual hygiene; eugenics; post-natal care of the child; methods of rejuvenation, inclusive of developing and maintaining of the mental faculties, senses, and physical vigours; methods for obtaining longevity, controlled use of alcoholic drinks and smoking mixture; medicated baths; and sudation by diaphoretics. There is, however, a special emphasis on scrupulous cleansing processes, namely, emesis, purgation, and enemas for the alimentary tract ; douches, flushing methods, and fumigation for the bodily orifices ; gargles, brushing and scraping for the oral cavity and teeth ; drops, pastes, and errhines for the eyes and nose; lubrication, massage and repeated ablutions for the skin surface. Local massage with special appliances mudpacks, cosmetic preparations, rouges, powders, etc. are prescribed for promoting personal beauty in women and men alike (*Sū.* **45** ; **46** ; *Śā* **10** ; *Ci.* **12** ; **24** ; **27** ; **30-40** ; *Utt.* **18**).

E. Some Diseases Meriting Special Mention

The *Suśruta Saṃhitā*, no less than the *Caraka Saṃhitā*, is a treatise on diseases, their diagnosis, symptoms and treatment. The pathological descriptions, causative factors, preliminary and progressive manifestations, and methods of treatment of several hundred diseases are given in the text, specially in the *Nidānasthāna*, *Cikitsāsthāna*, and in the *Uttaratantra*. A detailed synopsis of this aspect of the *Suśruta Saṃhitā* is not possible within the compass of this small work, but some diseases of special interest to modern readers have been singled out in the next few pages. Table VII summarizes the causes, the symptoms, and the treatments (medical) of all the diseases discussed in the text.

Eye diseases

The *Uttaratantra* of the *Suśruta Saṃhitā* contains a remarkably lucid and detailed account of the anatomy and physiology of the human eye, and the pathological conditions, which may arise in the eye, or affect the vision. Methods of treatment, including surgical processes, are also found for most of these conditions.

The origin or causative factors for such conditions may be of various types. Prolonged exposure of the eyes to light or heat, sudden cooling of the eyes by cold water after exposure to heat or light, prolonged contact with dust or smoke, sleeping during the day, keeping awake in the night or even keeping late hours, intense mental anguish, sexual incontinence, local injuries, intake of excessive quantities of acid or bitter substances in the diet, allowing sweat to trickle into the eyes, prolonged or frequent vomiting, forcible repression of vomiting and of tears, excessive weeping, and specially straining to focus the sight on very distant objects or very small near objects. All such practices derange or aggravate the local humours. The final result is the incidence of eye troubles. Humoral or congenital defects may also cause serious eye diseases (*Utt.* 1, 14).

Diseases due to morbid vāyu (Diseases of the nervous system)

Deranged and violently agitated *vāyu*, while coursing swiftly through the circulatory system of the body, may cause grave disorders until pacified and eliminated. If left uncorrected, they affect limited areas or the whole body, and may affect one side of the body, or both the sides simultaneously.

When such a condition affects the body channels (*dhamanī*) of one side of the body, the patient loses the movement of that side and may even lose all sensory impressions in the affected half of the body. This condition is known as hemiplegia (*pakṣāghāta*). Both sides may also be simultaneously affected by general paralysis, which may cause the patient to fall down and die (*Ni.* 1, 53-54).

When the *vāyu* in its vitiated condition moves through the system in convulsive jerks, it causes diseases like convulsions (*ākṣepaka*), epilepsy (*apatānaka*), and violent epileptic fits (*daṇḍāpatānaka*) (*Ni.* 1, 45-47).

Constantly increasing pressure of deranged *vāyu* in the system, if not relieved, results in the body being bent like a bow (*dhanustambha*), either on the front or the back side. Such a condition due to morbid *vāyu*, if confined to local areas of the body, causes stiffness of the neck (*manyāstambha*), facial paralysis (*ardita*), Erbe's paralysis (*viśvācī*), sciatica (*gṛdhrasī*), swelling of knee-joints (*kroṣṭukaśīrṣa*), loss of movement of the shoulder-joints (*aṃsaśoṣaka*), contraction of the muscles of the arms (*avavāhuka*), contraction of the muscles of the legs (*kalāyakhañja*), congestion and burning sensation in the soles of the feet (*pādadāha*), insensibility followed by a tingling sensation in the soles of the feet (*pādaharṣa*), pain in the region surrounding the inner ear (*karṇaśūla*), and other local manifestations of the deranged *vāyu*; lameness, deafness, and hunch-back condition are diseases acquired in the foetal stage by the action of deranged *vāyu* (*Ni.* **1**, 48, 57-58, 64-68).

Diabetes

Diabetes (*madhumeha*) is considered by Suśruta as the most serious of all affections of urinary elimination. The symptoms described are : passing of excessive quantities of urine, general weakness, thirst, exhaustion, and deep-seated and non-healing abscesses on the body. The disease attended with these symptoms is declared to be incurable, but the administration of certain natural minerals (pyrites and mineral exudates) is said to give relief to the patient. The use of the expressed oil of the *tuvaraka* (*Cajanus indicus*) fruit, compounded with catechu (*khadira*) and clarified butter, along with a diet containing flesh of birds as the main ingredient, is said to ensure health and longevity for very long periods to the diabetic patient. The treatment of the abscesses, by proper methods, must go hand in hand with the treatment of the diabetes itself (*Ni.* **6**, 31-36 ; *Ci.* **13**).

Rabies and hydrophobia

Dogs, jackals, wolves, predatory cats, and bears sometimes become uncontrollably infuriated and rabid. In this frenzied state, they run about with a peculiar crouching gait, growl, salivate excessively, bite other animals on sight, and pass on their rabid condition to others by such bites. The poisoned saliva (*śleṣma*?) coming in contact with the first humour of the bitten animal, violently aggravates the *vāyu* to such a stage that the animal not only loses its normal consciousness but also its normal instinctive behaviour. A human being, bitten in this way, exhibits all the usual symptoms of virulent poisoning and also loses his human intelligence and faculties. He screams and growls, generally imitates the behaviour of the animal by which he was bitten, and develops a strong antipathy to water and is exceedingly frightened by its sight or even by its mention. If this stage of hydrophobia (*jalatrāsa*) has developed in a patient, there is absolutely no chance of recovery. But in earlier stages, immediate bleeding and heat-cauterization, followed by specified medical treatment for the bites of various types of animals, are recommended as antidotes and cure (*Ka.* **7**, 7-10).

Venereal diseases

Though the etiology and symptoms of many different diseases of the genital organs with morbid urethral discharges are found in the *Suśruta Saṃhitā*, none of them can be

identified with any degree of exactitude with the two major venereal diseases of modern times. In the chapter on *prameha* (urinary diseases), white, slimy, frothy and bloody discharges with urine, excessive pain and burning sensation in micturition, piercing and shooting pains in the genital parts and bladder, and other well-known symptoms of the venereal disease, known as gonorrhoea, are found without any specific mention of sexual intercourse as the causative factor. Treatment consists of a thorough cleansing of the system by the emetics and purgatives, a special diet, a course of medication with specified prescription and regular physical exercise or active sports (*Ni.* **6**; *Ci.* **11**).

Upadaṃśa, a disease classified into five types, affecting the male genital organs, is declared to be due (among other causes) to sexual intercourse with women suffering from vaginal affections or conditions relating thereto. It may result also from close contact with, or from scratches by nails of persons suffering from such afflictions. The symptoms given in the text include many of those found in the primary stage of syphilis, but not the secondary and tertiary stages of the latter. Serious cases of *upadaṃśa* are said to lead to death, if left untreated. The treatment, recommended in the text, consists of application of soothing ointments and fomentation, local venesection or bleeding by application of leeches, internal cleansing by emetics, purgatives and enemas, application of plasters, and courses of medicinal prescriptions for cases which do not show suppuration or extensive damage to the genital organ. In cases of suppuration, however, surgical excision, draining of morbid discharges followed by medicinal applications, and drugs are prescribed. In the case of a local malignant ulceration, Suśruta recommends the surgical removal of the damaged part, followed by cauterization of the rest (*Ni.* **12**, 7-13 ; *Ci.* **19**, 13-22).

Obesity and emaciation

According to Suśruta both obesity (*sthaulya*) and abnormal emaciation (*kārśya*) are diseases, which develop due to abnormal formation of *rasa* in the digestive system. Such abnormality may occur due to various improper dietetic habits. In the case of obesity, a habitual diet containing large amounts of *kapha*-producing ingredients, over-indulgence in food even after normal hunger is satisfied, taking meals before the previous one has been fully digested, a sedentary life without regular exercise, sleeping in the day as a matter of habit, specially if immediately after meals — all these convert the food largely into an immature type of *rasa* (*āmarasa*) of the sweet (*madhurapāka*) variety. A preponderance of this type of *rasa* causes its overflow from its normal receptacles into all parts of the body. It thus escapes normal metabolic change and turns into bodily fat.

In the case of emaciation, a habitual diet containing large amounts of *vāyu*-producing substances or astringent substances, excessive physical exercise, work or physical habits which induce exhaustion or fatigue, prolonged study, continuous mental strain, lack of sleep, long periods of unsatisfied hunger, and habitual taking of insufficient quantity of food at meals — all these tend to desiccate the *rasa*, which not only fails to supply nourishment to various portions of the body, but actually tends to extract moisture from the latter.

When obesity develops, a person becomes short of breath, perspires freely, emits an offensive body odour, becomes chronically thirsty, snores while sleeping, or has irregular suspension of breath followed by explosive breathing, becomes inert, or dull in movements and indistinct in speech. Some of the symptoms of obesity are self-aggravating. A ravenous appetite leads to a taking of large and unnecessary amounts of food ; and an excessive lethargy and sleepiness develop. These lead to an excessive formation of the sweet variety of immature *rasa* and ultimately to further bodily fat. Due to heaviness of the limbs there is generally an inertia for work, exercise and sex-activity, which normally cause some loss of fat. Bodily strength is much diminished as the channels and internal passages of the body are blocked by fat, and there is no free movement of the normal products of body metabolism, which nourish and strengthen the body. If obesity is not treated and is allowed to remain unchecked, other diseases such as urinary disorders, urethral discharges, eruptions, boils, carbuncles, fever, and fistula caused by deranged *vāyu*, follow. Moreover, the obstruction of the channel system of the body causes aggravation of all diseases.

Obesity can be checked by elimination of the factors which cause it and by physical exercise. It can be cured by taking enemas of drugs with liquefying properties, or by taking drugs which have the property of cleansing internal channels and of reducing fat. A list of such drugs includes mineral exudates (*śilājatu*), cow's urine, the three myrobalans, finely powdered iron, antimony sulphide (*rasāñjana*), honey, barley, *mudga* pulse (*Phaseolus mungo*), *śyāmaka* (*Panicum frumentaceum*), and *guggulu* (*Balsamodendron mukul*) (*Sū.* **15,** 32-40).

If emaciation develops, the patient becomes incapable of bearing variations of temperature and changes of weather, and of enduring shortage of water or food even for short periods. Due to lack of bodily nourishment, patient's strength and vitality are lowered and he becomes gradually incapable of work, exercise, or even normal physiological activities. If the condition remains unchecked, diseases like asthma, cough, consumption, enlarged spleen and liver, abdominal dropsy, dyspepsia, glandular swellings, and haemoptysis follow. Under these circumstances any disease, contracted by the patient may easily develop into a virulent or aggravated form.

The treatment of emaciation, it is clear, consists of better nourishment with avoidance of developing body fat by over-eating, day sleep, etc. Factors, which cause emaciation like lack of food, hard labour and sexual incontinence, should be avoided in order to check the disease. Nourishing substances recommended include thickened milk, clarified butter, curds, meat, boiled rice of the *śāli* variety, wheat, liquorice, etc. Nutritive enemas are also prescribed (*Sū.* **15,** 33).

F. Dental Diseases

Dentistry as a special branch of medical science did not apparently exist in Āyurvedic practice. Dental care was included in the normal work of the physicians and surgeons, and was practised at three levels, namely, prophylactic measures as a

part of the daily routine, alleviation of some minor conditions by drugs, and applications of surgical measures for relief of serious dental diseases.

Brushing the teeth is considered compulsory as the first item of the daily hygienic routine. A specially prepared and shredded twig (*dantakāṣṭha*) from the thinner branches of margosa, catechu, or other astringent medicinal plants, to be discarded after a single use, is recommended. A tooth-paste, compounded of powdered drugs, rock-salt, vegetable oils, and honey, is recommended for use by means of a twig-brush, and each tooth is directed to be separately cleaned, inside and outside, taking care not to injure the gums. The bitter and astringent juices of the fresh twig-brush served to clean, freshen and disinfect the teeth and mouth. Gargles, mouth-washes, and the liberal use of clean cold water for rinsing are also recommended as auxiliary measures. Persons suffering from dental and oral affections, as well as patients of some other diseases, are advised to postpone this daily brushing until cured (*Ci.* **24**, 3-8).

Dental diseases mentioned in the text are diseases of the gum and of the teeth proper. The former includes bleeding gums, receding gums, inflamed and swollen gums, gum-boils, suppurated gums, sinus formation in gums, alveolar abscesses, loosening of teeth due to any of the above affections or to any external cause, impacted and painful wisdom tooth, and abnormal fleshy growths and tumours in the remote end of the cavity of the cheek where dental roots are situated. Those of the teeth include tooth-ache, extreme sensitiveness of the teeth to touch, acids, cold liquids, etc. brittle teeth, dental caries, tartar formation, erosion of teeth and dental enamel by calcareous deposits getting detached, and blackening or permanent discolouration of teeth. (*Ni.* **16,** 13-33).

Minor conditions included in the above list are treated by various methods like medicinal mouth-washes, fomentations, plasters, massage with salts and powdered drugs, or a combination of such methods, and sometimes by local bleeding and draining. But all serious conditions are treated by lancing, excision, opening and draining of sinus, removal of unhealthy growths, scraping of tartar deposits, removal of diseased teeth by forceps, etc. These are to be found in a later chapter, dealing with surgery. In all such treatments, general cleansing methods for the system, like emetics, purgatives, etc. and use of errhines to remove local congestion are recommended. Special diets are prescribed for some cases. Surgical treatment is to be followed by the usual course of after-care and rest (*Ci.* **22**, 9-29).

G. Mental and Psychic Disorders

In the introductory chapter of the *Suśruta Saṃhitā*, mental disorders are classed as one of the major categories of diseases (*Sū.* **1**, 20). Many other passages of the text mention mental disorders, but unfortunately the section on therapeutics (*Cikitsāsthāna*) does not contain any chapter or passage dealing with the diagnosis, classification, and treatment of such diseases. In the chapter on rejuvenation (*Ci.* **30**) of this section, certain drugs are prescribed for improving the mental faculties. The *Uttaratantra* however contains some chapters on insanity, epilepsy, and psychic disorders

supposed to be caused by malignant influences like those of demons, monsters, ghosts, etc. A wide range of disorders, found in new-born infants, are also attributed to similar causes.

Insanity (*unmāda*), however, is attributed purely to deranged humours which can obstruct the bodily channels conveying mental and sense faculties, situated in the upper regions of the body. Four different types of insanity can be caused by the aggravation of the three bodily humours acting individually, or simultaneously. A fifth type can be caused by intense grief or passions, which affect the bodily humours and bring about this condition. A sixth type of mental disorder akin to insanity is caused by the derangement of humours through the agency of poisonous substances. While the symptoms are different for each type of insanity, there are certain preliminary symptoms common to all types, such as vertigo, heart-palpitation, unusual energy manifested in normal activities, mental agitation, fits of unconsciousness, and emaciation. Treatment consists primarily of alleviating the known causes of mental derangement like grief, passions, etc. In all cases of insanity, the restoration of serenity and peace to the patient's mind is the first concern of the physician who should employ all means at his disposal to achieve this end. The administration of calculated shocks to the patient's mind is also recommended. Such shocks can be given by the demonstration of frightful scenes, communication of false news about the death of near relations, solitary confinement in a closed space, threats of severe physical punishment, and even by actual infliction of physical injuries. In cases of insanity caused by poisoning, antitoxic measures should be first undertaken. Blood-letting from the region of the chest, from outer corners of the eyes, and from the forehead are also recommended as first-aid measures. Long-term medical treatment of insanity consists first of oleation and sudation processes, followed by courses of emetics, purgatives and medicines for relieving congestion in the head. The use of medicated snuffs containing mustard oil, and regular massage with unguents containing the same oil as the main ingredient, are also recommended. An unusual remedy in the form of inhalation of the fumes from burning carcases of dogs or bears is also prescribed. The text also recommends the regular use of some tonics, prepared by cooking a large numbers of herbs and plants in clarified butter (*Utt.* **62**).

Epilepsy (*apasmāra*) is also a mental disease. As implied by its name (*apasmāra*), it involves the partial or total loss of cognition (memory and sense-perceptions). Epilepsy, like insanity, is the result of humoral derangement, but the original cause of such derangement lies in wrong conduct (*mithyācāra*) and improper gratification of the senses. The bodily humours deranged by such conduct gradually invade the sense-carrying channels of the body, causing loss of consciousness due to gradual accumulation of *tamas* (inertia) inside the channels. Unusual physical activity in the shape of involuntary writhings, groaning, contortions of the limbs, and uncontrolled motions of the eyeballs are caused by the abnormal accumulation of *rajas* (potential energy) in other channels. When the accumulation of *tamas* is so great that there is total loss of sensation, the disease is incurable. Epilepsy is of four types, orginating in the disordered states of the three humours individually, or all combined. The last type, the *sānnipātika* form of the disease, is also incurable, but open to palliative measures. An unusual

feature of all four types of epilepsy is the sudden manifestation of violent symptoms without any preliminary indications and also the sudden disappearance of such symptoms even when there has been no treatment. The only first-aid measure recommended in epilepsy, is blood-letting from the veins of the temples. Medical treatment prescribed follows the general pattern of treatment for insanity.

An unusual prescription consists of a fermented liquor prepared from the half-digested contents of a pig's stomach, the pig having been previously fed with a specially prepared diet of boiled rice and milky juice of the *bhārgī* plant (*Clerodendron siphonanthus*) after a prolonged period of fasting. The contents of the pig's stomach are taken out by surgical means, dried and powdered, and the powder suspended in an aqueous decoction of the *bhārgī* plant. The fermentation is induced by adding sediments of wine, and the resulting alcoholic liquor is matured until it acquires a specified colour and consistency (*Utt.* **61**).

Fourteen chapters of the *Uttaratantra* are devoted to the symptoms caused by malignant influences of evil spirits on adults and infants. Such influences are to be combated by recitations of hymns, mental recitations of sacred texts, offering to gods, religious rites, appeasement of the specific malignant spirit by gifts, and also by conventional medical treatments (*Utt.* **27-37**; **60-62**).

X

POISONS AND ANTIDOTES

The entire *Kalpasthāna* of the *Suśruta Saṃhitā* deals with the classification and description of various types of toxic substances and with an account of their physiological action on human and animal bodies and of their antidotes. Apart from accidental poisonings and bites from animals, reptiles and insects, deliberate administration of poison was apparently an usual occurrence in those days. An elaborate treatment of the subject is found in the text. As far as royalty and important personages were concerned, the royal physician was entrusted with the task of prevention, immediate detection, and effective cure of such cases. The high esteem in which the medical profession was held at the time is evident from the observation that the crowned head should not entrust his personal safety to any one else but his physician. Following this idea, the royal kitchen was also left in the control of a physician, who was responsible for sanitation, quality of the food, recruitment of all personnel, and for the entire administration. Everything meant for the consumption or personal use of royalty had to be examined and certified free from poisons by him. Foods and drinks were first closely examined for any visible or perceptible abnormality and then offered to crows and insects. Such foods were also thrown into the fire to observe any crackling noise, blue, green or any other unusual colouration imparted to the flame, and the evolution of any evil-smelling or unpleasant fumes causing headache or other symptoms. Medicines, tonics, ointments, snuffs, smoking mixtures, clothes, shoes, armours, ornaments, garlands, hair and massage oils, cosmetics, bathing water, tooth-brushes, combs, and even the bedding and seats for

royal personages, were also subjected to precautionary examination and tests. The text also mentions the possibility of poisoning by riding on poisoned animals Even with these elaborate steps, the risk of poisoning could not be completely avoided. The immediate symptoms of adminstered poison of various types and the first-aid measures to be applied to counteract them are described in the first chapter of the *Kalpasthāna.*

The second chapter of the section deals with the classification of poisons according to their sources. The class of vegetable poisons and mixed poison include fifty-five substances listed in the text, including eight plants with poisonous roots, five with poisonous leaves, twelve with poisonous fruits, five with poisonous flowers, seven with poisonous barks and piths, three with poisonous exudations, and thirteen with poisonous bulbs or rhizomes. White arsenic (*phenāśmabhasma*) and yellow orpiment (*haritāla*) are cited as two examples of mineral poisons. Such *sthāvara* (from immobile sources) poisons may be of powerful and quick actions liable to prove fatal within a short time, or they may be slow and insidious (*dūṣīviṣa*), being retained in the system for long periods without proving fatal. The primary, as well as the subsequent, symptoms of poisoning by the fifty-five different types of vegetable and mineral poisons are described in the text. The immediate step in all cases is to expel the poison as far as possible by induced vomiting and then to give the patient plenty of cold water to drink. These measures which should be followed by diagnosis of the poison and application of specific remedies, are also described in the text. For slow poisons, detected by chronic symptoms, the system is thoroughly cleansed by emetics and purgatives, followed by antidotes and medical treatment. Secondary maladies like fever, diarrhoea, heart attacks, epileptic fits, etc. caused by the presence of slow poisons in the system, should be treated by the respective prescribed methods along with measures aimed at eliminating and counteracting the poison (*Ka.* **2**). A type of poisoning encountered in times of war was the deliberate pollution of food supply and crops, fodder and pastures, surface water, roads and even the air of the area through which an army passed or was expected to pass. Apart from food stuffs which could be tested by prescribed methods, fodder and pasture were known to be poisoned which when taken by animals developed lassitude, vomiting or fainting fits, stomach troubles, etc. or even death. Surface water, when deliberately poisoned, becomes strong-smelling, frothy and unable to support the life of aquatic creatures which live in it or are kept in for observation. Birds and beasts generally avoid such water for drinking, and even bathing in it causes fever, fainting fits, burning sensation and nausea to men, elephants, and horses. Extensive areas of vegetation, roads, and surface water should be purified by the application of sufficient quantities of alkaline ashes of plants, sprinkling alcoholic decoctions of *ananta* (*Hemidesmus indicus*), or by an aqueous suspension of black clay or ant-hills. The beating of drums of certain specifications are also said to have the power of neutralizing widely spread poisons. If the atmosphere is deliberately poisoned by toxic smokes or vapour, it will produce breathing troubles, cough, nasal irritation, eye irritation, headache, etc. in men passing through the region. The fumes of burning lac, turmeric, cinnamon, cardamom and other drugs listed in the text are recommended as antitoxic agents for atmospheric pollution. Biting by predatory animals, reptiles, snakes, and by insects are also included among the hazards of the campaigning army. Such bites

may produce temporary or grave symptoms, depending upon the toxicity of the venom, and may prove fatal, specially in cases of snake-bites. The venom of such creatures are communicated from their fangs, teeth, nails, stings, bristles, and secretions from bodily orifices ; the blood, biles, urine, saliva, and rectal secretion, etc. of such creatures may also contain strong poisons. The carcases of such animals remain poisonous even after death, as also the bodies of animals killed by their bites. Hence the flesh of dead animals should not be used for food unless sufficient precautions have been taken. Arrows and spears smeared with vegetable, or mineral or animal poisons are also sources of poisoning which should be properly treated. The common feature of all poisons, communicated by food, drink, wearing apparel, inhaled fumes, and bites of poisonous creatures, is the simultaneous derangement and aggravations of all the three body humours. As a result, the system is unable to carry out its normal functions as long as the poison remains in the system. Hence, distressing symptoms, severe discomfort, or unconsciousness are general results of all poisons. Restoration of normal functioning of the body is not possible until such poisons are expelled from the system. It is stated that no poison can be digested or assimilated in the system ; and ill effects, maladies, or even death will occur in the absence of proper treatment (*Ka*. **3**).

The text goes on describing eighty types of snakes, their physical features, habits, classification in five categories (i.e. hooded, hoodless with coloured rings on the skins, striped, non-venomous, and hybrid), the distinctive features of the bites of different types, and the comparative virulence of the venoms secreted by them. The symptoms of snake-bites, described in detail in the text, differ for each type of snake, but all such symptoms show seven distinct stages with perceptible intervals between them. This is due to the fact that snake venoms attack the seven *kalās* (successive layers of the outer covering of the body), one by one. When one *kalā* is saturated with the venom at the height of its functioning, an interval of time is required for the *vāyu* to convey it to the next *kalā* and make it permeate the latter. Lower animals, however show only three or four distinct stages, ending in death. The bodies of mongooses, cats, etc. are partially immune to snake-bites, as the *kalās* in their bodies resist the action of snake venom (*Ka*. **4**).

Eighteen types of venomous rats and other rodents, and one hundred and three kinds of venomous insects (including ants, stinging flies, and mosquitoes) are also named in the text along with respective symptoms produced by their bites. Treatment is given in each case (*Ka*. **6** and **8**). Medical and surgical measures for bites of venomous snakes, and for the treatment of wounds resulting from penetration by poisoned arrows and spears have been prescribed in the text. In all snake-bites, two immediate measures are advised. The first is the application of a tight ligature of cloth or leather-strips, etc. about six inches away from the puncture and towards the heart, in the hope of arresting the admixture of the venom with the blood-stream. The second is either an additional or alternative treatment, and consists of cutting open the affected part, of bleeding, aided by suction if possible, and lastly of cauterization of the wound. When oral suction is applied for inducing bleeding, the mouth should contain a piece of absorbent linen. The person bitten is advised to bite firmly a lump of earth, or if

possible, bite into the body of the killed snake which has bitten him. Cauterization is however forbidden if the snake belongs to the *maṇḍalī* (hoodless with designs on its skin) type (*Ka.* 5, 2-4). If the poison has spread into the body due to lapse of time, the veins of the forehead should be opened for blood-letting in order to expel the poison along with the freely flowing blood. As soon as bleeding of the bitten part stops, or the blood-letting is discontinued, the area is washed with a decoction of red sandal wood and *uśīra* (cuscus grass) in water, after scraping off the surface-skin of the punctured area. Plasters of anti-poisonous drugs are next applied all around the scraped area. These first aid measures are followed by specific drugs and mixtures, appropriate to the different varieties of the snake. In the absence of such drugs and prescriptions being immediately available, the patient is made to drink a suspension of black earth or the powdered earth of ant-hills in water, and then swallow a paste of *kovidāra* (*Bauhinia variegata*), *śirīṣa* (*Albizzia lebbek*), *arka* (*Calotropis gigantea*), and *kaṭabhī* (*Cardiospermum helicacabum*), compounded together. During the first aid and subsequent treatment, the patient is made to vomit a number of times in order to eliminate any poison which has penetrated into the alimentary canal. As long as medication and convalscence continue the patient's diet should be free of oily and fatty substances, alcoholic liquor, and pulse of the *kulattha* variety (horse-gram). Specific treatments are also prescribed for snake-bitten persons, brought before the physician after a considerable lapse of time, for different secondary maladies and aggravated *doṣas*, besides the treatment of poisoned wounds (*Ka.* 5, 6-31).

XI

SOME SPECIAL RECIPES AND FORMULAS

The *Suśruta Saṃhitā* contains a large number of elaborate prescriptions of remedies for internal and external uses. These prescriptions often contain dozens, sometimes a hundred or more, different ingredients in each case. Except in a few cases it has not been possible to give an account of these prescriptions or the methods given for compounding them, but an attempt has been made in Tables II, III, IV, VII to indicate the use of individual substances recommended for medical and surgical treatment in different cases. Some of these prescriptions have some interest even in modern times, and a selection of these is given below.

Indralupta (alopecia or total baldness) is said to be cured by scraping the affected surface until bleeding occurs from the surface, and then keeping the area covered with a paste of *guñjā* (*Abrus precatorius*) seeds. Application of the paste is continued till healing, when fine hairs are seen to have grown on the surface. At this stage a hair oil, prepared by heating together equal parts of *karavīra* (*Nerium odorum*), *mālatī* (*Aganosma caryophyllata*), *agni* (*Plumbago zeylanica*), and *naktamāla* (*Pongamia glabra*) is recommended for regular massage on the part (*Ci.* 20, 15). A plaster compounded of goat's milk and equal parts of ivory black and antimony black, or a paste prepared from ferrous sulphate with tender leaves of *naktamālu* and *kapittha* (wood-apple, *Feronia elephantum*)

juice is declared to have the same result on any part of the body, even without previous scraping (*Ci.* **1**, 88-90).

A preparation said to have the power to restore the original colour of greying hair (not a hair-dye) is given, which is supposed to cure baldness at the same time. It is prepared by pasting together petals of *śaireya* (*Barleria prionitis*), *jambu* (*Eugenia jambolana*), *arjuna* (*Terminalia arjuna*), and *kāśmarī* (*Gmelina arborea*) flowers ; *tila* (sesamum) and *bhṛṅgarāja* (*Wedelia calendulacea*) seeds ; mango stones (*cūta bīja*) ; the *punarnavā* (*Boerhavia diffusa*) and *kaṇṭakārī* (*Solanum xanthocarpum*) plants ; finely pasted *piṇḍītaka* (*Randia dumetorum*) seed ; essence of *bīja* (*Terminalia tomentosa*) plant ; *yaṣṭimadhu* (liquorice), *nīraja* (blue lotus), *sārivā* (*Hemidesmus indicus*), and *madyantī* (Arabian jasmine, *Lawsonia alba*) plants ; mud clinging to a lotus; ferrous sulphate ; finely powdered iron and antimony black ; using a decoction of the *asana* pith as the pasting fluid. The paste is then mixed with seven *prasthas* (i.e. about 11 litres) of the same decoction of *bīja* pith. This liquid is kept covered for ten days in an iron vessel and then carefully simmered with one *āḍhaka* (i.e. about six and a quarter litres) of the vegetable oil prepared from *vibhītaka* (*Terminalia belerica*) seeds. This mixture is matured for another month in a fresh iron vessel and then applied on the scalp and inside the nostrils as a daily application for a month. The diet should contain green gram (*Phaseolus mungo*) as a main item of daily fare. Thick, curly, and jet-black hair is supposed to grow on a bald or grey head after a month of this treatment (*Ci.* **25**, 19).

A prescription is given for a liquid cosmetic supposed to cure wrinkles, spots or blemishes, acnes, scars, pock-marks, moles, and eruptions, and to give gradually a fresh unblemished skin. This liquid requires nearly fifty different ingredients of mineral, animal, and vegetable origin, and is obviously a complicated and costly preparation. It is specially meant for ladies of royal and aristocratic families, though men are also said to be benefitted by its use. A simpler liquid skin cosmetic can be compounded from *harītakī* (*Chebulic myrobalan*) fruit, *nimba* (*margosa*) leaves, mango-tree bark, stalks of pomegranate flowers, and flowers and leaves of *madayantikā* (Arabian jasmine, *Lawsonia alba*) —— all components being dried, finely powdered and intimately mixed. Dark complexions are said to appear bright and fair by its use (*Ci.* **25**, 20-21).

A preparation of many ingredients, known as *syandanataila*, is recommended for non-healing sores, ulcers, and fistulas. It is said to have a powerful healing action on damaged and sloughing tissues, and to have the remarkable power of gradually replacing scar-tissues by normal tissues, indistinguishable from the surrounding area in colour and texture (*Ci.* **8**, 20). A number of prescriptions are recommended for the specific purpose of restoring the normal skin colour to a dark cicatrix on a white skin surface. The action is generally slow and gradual, necessitating regular application over a period (*Ci.* **1**, 84).

Another complicated preparation known as *gandhataila* is said to be efficacious in bringing about, by regular massage over the affected area, the union of fractured bones which fail to join normally. Massage with this oil is also recommended for hemiplegia,

facial paralysis, and deafness. The compounding of this oil, requiring more than thirty different ingredients and nearly a month for successive operations, is described in detail in the text (*Ci.* **3**, 44-48).

A plaster composed of bees-wax, liquorice, gum dammar (resin of *Shorea robusta*), powdered *mañjiṣṭhā* (*Rubia cordifolia*) leaves, red sandalwood paste, and *mūrvā* (*Sanseviera zeylanica*) plant, pasted together and boiled in clarified butter, is said to promote rapid healing in severe burns (*Sū.* **12**, 19).

Turmeric, *kaṭuka* (*Picrorhiza kurroa*), *balā* (*Sida cordifolia*), *bilva* (*Aegle marmelos*) roots, *hiṃsrā* (*Nardostachys jatamansi*), and *gojihvaka* (*Elephantophus scaber*) are taken in equal measure, to which sixteen times their total weight of water is added, and a decoction is prepared by prolonged simmering. This decoction is filtered. Vegetable oil, amounting to one-fourth of the original amount of water taken, is now mixed with the thickened filtered liquid and the mixture cooked till it becomes homogeneous and emulsified. This oily liquid is said to cure sinus sores by purifying, healing, and filling up the damaged area (*Ci.* **17**, 11).

XII

LIVING CREATURES AND THEIR CLASSIFICATION

A number of different methods of classifying living creatures are found in the text. One such classification depends upon their origin, dividing all creatures into *jarāyuja* (viviparous, e.g. man, quadrupeds, etc.); *aṇḍaja* (oviparous, e.g. birds, reptiles, etc.); *svedaja* (born out of heat and moisture, e.g. ants, worms, etc.); *udbhijja* (born out of vegetation, e.g. fire-flies, tadpoles, etc.) (*Sū.* **1**, 23).

Special class-names of some genera and species are also found at various places in the text : *catuṣpada-kīṭa* (four-legged insects); *ekaśapha* (unihoofed animals); *jaleśaya* (aquatic creatures); *khaga* (flying creatures); *kīṭa* (insects); *kravyabhuja* (carnivorous animals); *kṛmi* (worms and parasites); *mṛga* (forest animals, game); *paśu* (herbivorous quadrupeds); *sarīsṛpa* (reptiles); *vyāla* (marauding beasts) (*Sū.* **1**, 23; **7**, 4; **46**, 53; *Ka.* **3**, 4).

But except for a few illustrative examples, the body of the text does not follow these classifications.

The text gives two other systems of classification, both based on habits and anatomical features, but listing only creatures whose flesh are edible. The first classification divides creatures into: *jaleśaya* (aquatic); *ānūpa* (frequenting marshy lands); *grāmya* (domesticated); *kravyabhuja* (carnivorous); *ekaśapha* (unihoofed); *jāṅgala* (dwelling in dry areas) (*Sū.* **46**, 53).

There is, however, a second system of classification of (vertebrate) animals for dietary purposes into two main divisions, depending upon their habits and habitats. These are: *jāṅgala*, animals that live in dry (hilly) jungle lands; *ānūpa*, aquatic or amphibious animals (animals living in marshy or water-logged lands, or in water).

The former is further sub-divided into eight classes: *jaṅghāla* (wild herbivorous quadrupeds, strong-legged and quick-footed); *viṣkira* (birds that scatter their food in picking up); *pratuda* (birds that pierce or torment their food with the beak); *guhāśaya* (carnivorous quadrupeds living in natural caves or hollows); *prasaha* (birds of prey proper); *parṇamṛga* (arboreal animals); *vileśaya* (animals that live in holes or burrows); *grāmya* (domesticated quadrupeds) (*Sū*. **46**, 53).

The *ānūpa* class is sub-divided into five classes: *kūlācara* (herbivorous quadrupeds that frequent the banks of rivers and ponds); *plava* (birds floating on water); *kośastha* (living in shells); *pādīna* (aquatic animals having pedal or long dorsal appendages); *matsya* (fishes—sea-water and fresh water) (*Sū*. **46**, 94).

This classification has been used in Table I. Insects, poisonous creatures, and other non-edible living forms have also been included in Table I from references scattered in different parts of the text.

XIII

PLANT AND PLANT LIFE

A. Classification (general)

Suśruta classifies all substances into two main divisions: *sthāvara* (immobile) and *jaṅgama* (mobile). Plants come under the first category.

Plants are, however, again sub-divided into four classes: *vanaspati*, that yield fruits, without blossoms; *vṛkṣa*, which are endowed with both flowers and fruits; *vīrūdha*, it includes both shrubs, and creepers that spread on the ground; *oṣadhi*, which die with the ripening of fruits (*Sū*. **1**, 22).

B. Ecology

Influence of soil

The growth of a plant depends on the soil, water, and season (*Śā*. **2**, 33). The soil, beneficial for the germination of medicinal plants should, according to Suśruta, be soft (*snigdha*), firm (*abhaṅgura*), uniform (*sama*), black, yellow, or red coloured, devoid of sandy particles, fertile (*anūṣara*), and one, where plants already grew before. The ground should be adjacent to some source of water, should be free from any holes, ditches, gravels, stones, or ant-hill. It should not be a ground which has been used for the purpose of cremation or execution (*Sū*. **36**, 2).

Plants partake virtues of the soil on which they grow. Suśruta discusses the character of the soils on the basis of the five elements and six properties, present in them. The soil, having a preponderancy of the earth matter, is pebbly, steady, heavy, and smoke or dark coloured. It is beneficial to the growth of large trees and the production of rich crop. Soil, charged with essential properties of water, is cool, slimy, and white in colour. It is conducive to a rich yield of crops and a lavish growth of soft grass and tender trees. The multi-coloured gravelly soil, which contributes only to the germination of scanty and yellowish sprouts, is endowed with the attributes of fire. The grey-coloured soil, on which only rough, dry, and porous trees can grow, is dominated by the specific properties of air. The soil, having the essential properties of sky, is dark and moist due to the oozing of invisible water. The type of plants, growing on it, are the weeds and under-shrubs (*Sū*. **36**, 3-4).

Herbs of purgative properties growing on the soil having the qualities of water and earth, herbs of emetic virtues germinating in the soil with the essential attributes of fire, sky, and earth, herbs of both the properties, sprouting in the soil seized with the attributes of both the groups, and herbs of soothing properties, reared on a soil with the essential properties of the sky, are to be collected for medicinal purposes (*Sū*. **36**, 5).

The soil, having the attributes of all the five elements, is called *sādhāraṇabhūmi* (land of intermediate region). It is specially conducive to the growth of medicinal plants and herbs of best qualities, as they inherit the specific virtues of the soil (*Sū*. **36**, 10).

Soils are also classified according to the prominence of one of the six fundamental properties, like, *rūpa* (particle size), *varṇa* (colour), *gandha* (smell), *rasa* (taste), *sparśa* (touch), and *śabda* (sound). inherent in them. The *rasa* property is transferred to the soil from the water in which it is latent. Plants are endowed with the particular property, predominant in the soil on which they grow (*Sū*. **36**, 8-9).

Soil with cooling quality is beneficial for the growth of plant of cooling virtues. Similarly soil with heating quality is conducive to the germination of plants of heat-producing attributes (*Sū*. **36**, 4).

Influence of season

The influence of season on the plant is also recognized by Suśruta. Plants and herbs growing in the rainy season possess feeble therapeutic properties. They accumulate potency in the cool season. In summer they lose their sap, moisture, and nutritive elements (*Sū*. **6**, 11). A cool season is recommended for the collection of plants of cooling virtues, because such a season imparts sweet, cool, and placid attributes to the plants. Likewise, a hot season is prescribed for the collection of heat-producing plants. Plants and herbs in any particular season are endowed with its corresponding virtues (*Sū*. **36**, 4).

To ensure the healthy growth of plants, several measures are laid down. These include protection of a plant from being infested with worms or insects, from infection with poison, from sun, action of heat and water, and from sharp weapons (*Sū.* **36**, 2).

C. Morphology

Suśruta gives a more or less detailed account of different parts of a plant body. Some of the parts are compared to those of the human body (*Śā.* **4**, 8, 10).

The names of different parts of a plant body are given as *aṅkura* (sprout), *mūla* (root), *kanda* (bulb or rhizome), *sāra* (hard core inside the trunk, pith), *kṣīriṇa* (laticiferous tissues), *tvak* or *niralekhana* (bark), *patra* (leaf), *patrasevanī* (large central vein of the leaf from which small and minute fibres emanate), *puṣpamukula* (bud), *patra-keśara* (seed organ of flower in which its fragrance is latent), *puṣpa* (flower), *phala* (fruit), *asthi* (stone or seed inside the fruit), *keśara* (fibre of the fruit), *majjā* (marrow of the fruit), *māṃsa* (pulp of the fruit), *tvak* (rind of the fruit) (*Sū.* **14**, 15; **46**, 151; *Śā.* **3**, 18; **4**, 8, 10; **5**, 22; **7**, 2).

The names of different parts of the lotus plant found mentioned in the *Suśruta Saṃhitā*, are *kanda* (stem, leaves and parts of a lotus plant, originating from *kanda* or bulb spread over the whole surface of a pool or a tank), *visa* (the shoot or sucker of a water-lily), *mṛṇāla* (fibre of a lotus plant), *padminīkaṇṭaka* (thorn on the stem of a lotus plant), *padmapuṣkara* (circles of petals of a lotus flower), *keśara* (filament of lotus) (*Sū.* **38**, 22; *Śā.* **4**, 8, 10; **7**, 32; *Ni.* **11**, 12; **13**, 32). The functions of *visa* and *mṛṇāla* are to carry *rasa* throughout the plant body (*Śā.* **7**, 32; **9**, 9).

D. Taxonomy

Classification of plants according to their therapeutic values

Suśruta has made two different classifications of plants. In one of these the plants are divided into thirty-five *vargas* (groups) based on therapeutic value, but named after the leading or prominent plant in each. In each *varga* the plants are arranged in a highest to lowest order in terms of intensity of their therapeutic values. Among the thirty-five *vargas*, thirty-three are comprised of plants proper, whereas the remaining two (i.e. nos. 3, 22) consist of plants and minerals (*Sū.* **38**).

Name of the *vargas* and the plants included under each	Properties
1. *Ambaṣṭhādi* *ambaṣṭha*, *dhātakī* (flower), *samaṅgā*, *kaṭvaṅga*, *madhuka*, *bilvapeśika*, *rodhra*, *śāvararodhra*, *palāśa*, *nandī-vṛkṣa*, and *padma* (filament).	Beneficial in deranged *pitta*, ulcer, fractured bones, and dysentery where the stools are found to consist of lumps of thick and natural mucus.

	Name of the *vargas* and the plants included under each	Properties
2.	*Āmalakādi* *āmalakī*, *harītakī*, *pippalī*, and *citraka*.	General febrifuge, aphrodisiac, tonic or restorative, appetizer; destroy *kapha* and improve eyesight.
3.	*Āñjanādi* *āñjana*, *rasāñjana*, *nāgapuṣpa*, *priyaṅgu*, *nīlotpala*, *nalada*, *nalinī* (filament), and *madhuka*.	Curative of haemoptysis; antitoxic; allay the internal burning sensation of the body.
4.	*Āragbadhādi* *āragbadha*, *madana*, *gopoghoṇṭā*, *kaṇṭakī*, *kuṭaja*, *pāṭhā*, *pāṭalā*, *mūrvā*, *indrayava*, *saptaparṇa*, *nimba*, *kuraṇṭaka*, *dāsīkuraṇṭaka*, *guḍacī*, *citraka*, *śāraṅgaṣṭā*, *karañja* (two species), *paṭola*, *kirātatiktaka*, and *suṣavī*.	Beneficial in deranged *vāyu* and *pitta*; in pthisis, splenetic disease (*gulma*), aching of limbs, asthma and cough.
5.	*Arkādi* *arka*, *alarka*, *karañja* (two species), *nāgadantī*, *mayūraka*, *bhārgī*, *rāsnā*, *indrapuṣpī*, *kṣudraśvetā*, *mahāśvetā*, *vṛścikālī*, *alavaṇa*, and *tāpasavṛkṣa*.	Destroy *kapha*, fat, and effects of poison; act as a vermifuge, and a specific aseptic agent in case of ulcers; curative of skin-diseases.
6.	*Daśamūla* Consists of the roots of (i) *kanīya-pañcamūla* and (ii) *mahat-pañcamūla* groups (vide nos. 14, 15).	Beneficial in deranged humours, in asthma and difficult respiration; act as good digestant in undigested lymph; cure all types of fevers.
7.	*Elādi* *elā*, *tagara*, *kuṣṭha*, *māṃsī*, *dhyāmaka*, *tvakpatra*, *nāgapuṣpa*, *priyaṅgu*, *hareṇukā*, *vyāghranakha*, *śukti*, *caṇḍā*, *sthauṇeyaka*, *śrīveṣṭaka*, *coca*, *coraka*, *vālaka*, *guggulu*, *sarjarasa*, *turuṣka*, *kunduruka*, *aguru*, *spṛkkā*, *uśīra*, *bhadradāru*, *kuṅkuma*, and *punnāgakeśara*,	Subdue the action of *vāyu* and *kapha*; neutralize the effects of poison; arrest the eruption of pimples and leprous spots and check the itching sensation incidental thereto.

Name of the *vargas* and the plants included under each	Properties
8. *Guḍūcyādi* *guḍacī*, *nimba*, *kustumburu*, *candana* (all varieties), and *padmaka*.	Good appetizer; act as general febrifuge; beneficial in nausea, want of relish for food, vomiting, thirst, and burning sensation of the body.
9. *Kākolyādi* *kākolī*, *kṣīrakākolī*, *jīvaka*, *ṛṣabhaka* *mudgaparṇī*, *māṣaparṇī*, *medā*, *mahā-medā*, *chinnaruhā*, *karkaṭāśṛṅgī*, *tugā-kṣīrī*, *padmaka*, *prapauṇḍarīka*, *ṛddhi*, *vṛddhi*, *mṛdvīkā*, *jīvantī*, and *madhuka*.	Subdue the action of the deranged *pitta*, blood and *vāyu*; increase the quantity of breast milk; favour the accumulation of phlegm in the body; restorative and elixir; augment the virile potency.
10. *Lākṣādi* *lākṣā*, *ārevata*, *kuṭaja*, *aśvamāra*, *kaṭ-phala*, *haridrā* (two species), *nimba*, *saptacchada*, *mālatī*, and *trāyamāṇa*.	Good vermifuge; purifying agent in cases of bad, malignant or indolent ulcers (*duṣṭavraṇa*); curative of deranged *kapha* and *pitta*, and cutaneous affections.
11. *Muṣkakādi* *muṣkaka*, *palāśa*, *dhava*, *citraka*, *madanavṛkṣaka*, *śiṃśapā*, *vajravṛkṣa*, and *triphalā*.	Beneficial in destroying fat; remove seminal defects; curative of urinary disease, piles, jaundice, chlorosis, and urinary calculi.
12. *Mustādi* *mustā*, *haridrā*, *dāruharidrā*, *harītakī*, *āmalaka*, *vibhītaka*; *kuṣṭha*, *haimavatī*, *vacā*, *pāṭhā*, *kaṭurohiṇī*, *śāraṅgaṣṭā*, *ativiṣā*, *drāviḍī*, *bhallātaka*, and *citraka*.	Destroy the deranged *śleṣman*; cure uterine and vaginal disorders; purify the breast milk of a mother; good digestant.
13. *Nyagrodhādi* *nyagrodha*, *uḍumbara*, *aśvattha*, *plakṣa*, *madhuka*, *kapītana*, *kakubha*, *āmra*, *kośāmra*, *corakapatra*, *jambu* (two species), *piyāla*, *madhūka*, *rohiṇī*, *vañjula*, *kadamba*, *badarī*, *tindukī*, *śallakī*, *rodhra*, *sāvararodhra*, *bhallā-taka*, *palāśa*, and *nandīvṛkṣa*.	Beneficial in ulcer, uterine and vaginal disorders, adhesion of fractured bones, all types of bodily secretions, and haemoptysis; act as anti-fat; cure burning sensation of the body.

	Name of the *vargas* and the plants included under each	Properties
	Pañcamūla (roots of five plants) It includes five *vargas* (nos. 14-18)	
14.	*Kanīya-pañcamūla* (minor group of five roots) *trikaṇṭaka*, *vṛhatī* (two species), *pṛthakparṇī*, and *vīdārigandhā*.	Tonic and aphrodisiac; subdue deranged *vāyu* and *pitta*.
15.	*Mahat-pañcamūla* (major group of five medicinal plants) *bilva*, *agnimantha*, *ṭuṇṭuka*, *pāṭalā*, and *kāśmarī*.	Conducive to deranged *kapha* and *vāta*; appetizing.
16.	*Vallī-pañcamūla* (roots of medicinal creepers) *vidārī*, *sārivā*, *rajanī*, *guḍūcī*, and *ajaśṛṅgī*.	Curative of haemoptysis, and three types of oedema; arrest all sorts of urethral discharges; a potent remedy in all cases of seminal disorders.
17.	*Kaṇṭaka-pañcamūla* (five medicinal thorny shrubs) *karamarda*, *trikaṇṭaka*, *sairīyaka*, *śatāvarī*, and *gṛdhranakhī*.	Same as *vallī-pañcamūla*
18.	*Tṛṇa-pañcamūla* (five medicinal herbs of the roots of grass species) *kuśa*, *kāśa*, *nala*, *darbha*, and *kāṇḍekṣuka*.	Curative of haemoptysis, renal defects, and urinary diseases.
19.	*Pārūṣakādi* *parūṣaka*, *drākṣā*, *kaṭphala*, *dāḍima*, *rājādana*, *kataka* (fruit), *śāka* (fruit), and *triphalā* (three myrobalans)	Subdue deranged *vāyu*; remove thirst; act as a cordial; increase relish for food; cure diseased or abnormal components of urine, or its defects.
20.	*Paṭolādi* *paṭola*, *candana*, *kucandana*, *mūrvā*, *guḍūcī*, *pāṭhā*, and *kaṭurohiṇī*.	Febrifuge and antitoxic; subdue the action of deranged *pitta* and *kapha*; restore the natural relish of the patient for food; beneficial in vomiting, ulcers, and itching erythematous eruptions.
21.	*Pippalyādi* *pippalī*, *pippalīmūla*, *cavya*, *citraka*, *śṛṅgavera*, *marica*, *hastipippalī*, *hareṇukā*, *elā*, *ajamodā*, *indrayava*, *pāṭhā* (fruit), *jīraka*, *sarṣapa*, *mahānimba*, *hiṅgu*, *bhārgī*, *madhurasā*, *ativiṣā*, *vacā*, *viḍaṅga*, and *kaṭurohiṇī*.	Good appetizer; absorbent of intestinal mucus and unassimilated lymph chyle; curative of catarrh, deranged *kapha* and *vāta*, abdominal glands, colic, and gastralgia; beneficial in anorexia.

Name of the *vargas* and the plants included under each	Properties
22. *Priyaṅgvādi* *priyaṅgu, samaṅgā, dhātakī, nāgapuṣpa, candana, kucandana, mocarasa, rasāñjana, kumbhikā, sroto'ñjana, padma* (filament), *yojanavallī*, and *dīrghamūla*.	Same as that of *ambaṣṭhādi*.
23. *Rodhrādi* *rodhra, sāvararodhra, palāśa, kuṭannaṭa, aśoka, phañjī, kaṭphala, elavāluka, śallakī, jiṅginī, kadamba, sāla*, and *kadalī*.	Antidotal to the deranged *kapha* and fat; remove vaginal and uterine disorders; neutralize the effects of poison; act as styptic and purifying agent in ulcers; arrests secretions and excretions of the body.
24. *Sālasārādi* *sāla* (essence), *ajakarṇa, khadira, kadara, kālaskandha, kramuka, bhūrja, meṣaśṛṅgī, tiniśa, candana, kucandana, śiṃśapā, śirīṣa, asana, dhava, arjuna, tāla, śāka, naktamāla, pūtikā, aśvakarṇa, aguru*, and *kālīyaka*.	Act as a vermifuge and as an aseptic agent; subdue deranged *kapha*; beneficial in catarrh, anorexia, asthma and cough.
25. *Sārivādi* *sārivā, madhuka, candana, kucandana, padmaka, kāsmarī*, and *uśīra*.	Allay thirst; beneficial in haemoptysis, bilious fever and burning sensation of the body.
26. *Surasādi* *surasā, śvetasurasā, phaṇijjhaka, arjaka, bhūstṛṇa, sugandhaka, sumukha, kālamāla, kāsamarda, kṣavaka, khurapuṣpa, viḍaṅga, kaṭphala, surasī, nirguṇḍī, kulāhala, undurukarṇikā, phañjī, prācībala, kākamācī*, and *viṣamuṣṭika*.	Vermifuge and aspeptic; beneficial in catarrh, anorexia, asthma and cough.
27. *Śyāmādi* *śyāmā, mahāśyāmā, trivṛt, dantī, śaṅkhinī, tilvaka, kampillaka, ramyaka, kramuka, putraśreṇī, gavākṣī, rājavṛkṣa, karañja* (two species), *gudūcī, saptalā, cchagalāntrī, sudhā*, and *suvarṇakṣīrī*.	Antitoxic; beneficial in abdominal glands, epistasis, abdominal dropsy and diarrhoea; reliable purgative in cases of obstinate constipation with suppression of urine and distention of the abdomen.

Name of the *vargas* and the plants included under each	Properties
28. *Trikaṭu* *pippalī*, *marica*, and *śṛṅgavera*.	Destroy fat and *kapha*; curative of cutaneous affections, leprosy, morbid discharges from urethra, abdominal glands, and catarrh; beneficial in anorexia and indigestion.
29. *Triphalā* *harītakī*, *āmlakī*, and *vibhītaka*.	Subdue the action of deranged *vāyu*, *kapha* and *pitta*; curative of urinary disease, leprosy, and chronic intermittent fever; imrpove eyesight; good appetizer.
30. *Utpalādi* *utpala*, *raktotpala*, *kumuda*, *saugandhika*, *kuvalaya*, *puṇḍarīka*, and *madhuka*.	Beneficial in thirst, deranged *pitta* and vitiated blood; soothe burning sensation of the body; curative of vomiting, angina pectoris, syncope, haemoptysis, and poisoning.
31. *Vacādi* and *Haridrādi* *vacā*, *mustā*, *ativiṣā*, *abhayā*, *bhadradāru*, *nāgakeśara*, *haridrā*, *dāruharidrā*, *kalaśī*, *kuṭaja* (seed), and *madhuka*.	Purify breast milk; assimilate the deranged humours of the body; curative of mucous dysentery.
32. *Varuṇādi* *varuṇa*, *ārtagala*, *śigru*, *madhuśigru*, *tarkāri*, *meṣaśṛṅgī*, *pūtika*, *naktamāla*, *moraṭa*, *agnimantha*, *saireyaka* (two species), *bimbī*, *vasuka*, *vasira*, *citraka*, *śatāvarī*, *bilva*, *ajaśṛṅgī*, *darbha*, and *vṛhatī* (two species).	Efficacious in reducing the deranged *kapha* and fat; beneficial in cephalalgia, splenetic disease and internal abscesses.
33. *Vidārigandhādi* *vidārigandhā*, *vidārī*, *sahadevā*, *viśvadevā*, *śvadaṃṣṭra*, *pṛthakparṇī*, *śatāvarī*, *sārivā*, black *sārivā*, *jīvaka*, *ṛṣbhaka*, *mahāsahā*, *kṣudrasahā*, *vṛhatī*, *punarnavā*, *eraṇḍa*, *haṃsapadī*, *vṛścikālī*, and *ṛṣabhī*.	Subdue the action of deranged *vāyu* and *pitta*; beneficial in phthisis, splenetic disease, aching of the limbs, asthma and cough.

Name of the *vargas* and the plants included under each	Properties
34. *Vīratarvādi* *vīrataru, sahacara* (two species), *darbha, vṛkṣādanī, gundrā, nala, kuśa, kāśa, aśmabhedaka, agnimantha, moraṭa, vasuka, vasira, bhalluka, kuruṇṭaka, indīvara, kapotavaṅka,* and *śvadaṃṣṭra.*	Beneficial in deranged state of *vāta*, and curative of all sorts of urinary trouble.
35. *Vṛhatyādi* *vṛhatī, kaṇṭakārikā, kuṭaja* (fruit), *pāṭhā,* and *madhuka*	Good digestant; assimilate the deranged humours; subdue deranged *vāta, pitta* and *kapha*; efficacious in cases of nausea, difficult urination, and dysuria.

In the other classification based on therapeutic values, plants are divided into two main groups: *saṃśodhana* (purifying) and *saṃśamana* (pacifying); each of these again is subdivided into three *vargas* (*Sū.* **39**).

The *vargas* of the *saṃśodhana* class include:

Ūrdhvabhāga (emetic drugs), viz. (fruits of) *madana, kuṭaja, jīmūtaka, ikṣvāku, dhāmārgava, kṛtavedhana, sarṣapa, viḍaṅga, pippalī, karañja,* and *prapunnāda*; (roots of) *kovidāra, karvudāra, ariṣṭa, aśvagandhā, vidula, bandhujīvaka, śvetā, śaṇapuṣpī, bimbī, vacā,* and *mṛgervāru.*

Adhobhāga (purgative drugs), viz. (roots of) *tṛvṛt, śyāmā, dantī, dravantī, saptalā, śaṅkhinī, visāṇikā, gavākṣī, cchagalāntrī, snuk, suvarṇakṣīrī, citraka, kiṇihī, kuśa,* and *kāśa*; (barks of) *tilvaka*; (powdery substance of fruits of) *kampillaka*; (barks of) *ramyaka,* and *pāṭala*; (fruits of) *pūga, harītakī, āmalaka, vibhītaka, nīlinī, āragbadha,* and *eraṇḍa*; (leaves of) *pūtika* and *caturaṅgula*; (milky juices of) *mahāvṛkṣa, saptacchada, arka,* and *jyotiṣmatī.*

Plants common for the two *vargas*, viz. *kośātakī, saptalā, śaṅkhinī, devadālī,* and *kāravellikā.*

Śirovirecana (errhines), viz. (fruits of) *pippalī, viḍaṅga, apāmārga, śigru, siddhārthaka, śirīṣa, and marica*; (roots of) *karavīra, bimbī, girikarṇikā, kiṇihī, vacā, jyotiṣmatī, karañja, arka,* and *alarka*; (bulbous roots of) *laśuna, ativiṣā,* and *śṛṅgavera*; (leaves of) *tālīśa, tamāla, surasā,* and *arjaka*; (barks of) *iṅgudī* and *meṣaśṛṅga*; (flowers of) *mātuluṅgī, suraṅgī, pīlu,* and *jātī;* (essences of) *śāla, tāla,* and *madhuka;* (exudations of) *lākṣā,* and *hiṅgu.*

The *vargas* of the *saṃśamana* class include:

Vāta-saṃśamana (*vāyu*-sedative drugs), viz. *bhadradāru, kuṣṭha, haridrā, varuṇa, meṣaśṛṅgī, balā, atibalā, ārtagala, kacchurā, śallakī, kuverākṣī, vīrataru, sahacara,*

agnimantha, vatsādanī, eraṇḍa, aśmabhedaka, alarka, arka, śatāvarī, punarnavā, vasuka, vasira, kāñcanaka, bhārgī, kārpāsī, vṛścikālī, pattūra, badara, yava, kola, kulattha, the drugs containing *vidārigandhādi* and first two groups of *pañcamūla* (vide previous Table).

Pitta-saṃśamana (*pitta*-sedative drugs), viz. *candana, kucandana, hrīvera, uśīra, mañjiṣṭhā, payasyā, vidārī, śatāvarī, gundrā, śavala, kalhāra, kumuda, utpala, kandalī dūrvā, mūrvā*, the drugs forming the groups of *kākolyādi, sārivādi, āñjanādi, utpalādi, nyagrodhādi*, and *tṛṇapañcamūla* (vide previous Table).

Śleṣma-saṃśamana (*śleṣma*-sedative drugs), viz. *kāleyaka, aguru, tilaparṇī, kuṣṭha, haridrā, śītaśiva, śatapuṣpā, sarala, rāsnā, prakīrya, udakīrya, iṅgudī, sumanaḥ, kākādanī, lāṅgalakī, hastikarṇa, muñjātaka*, and the drugs belonging to the *vallī-pañcamūla, kaṇṭaka-pañcamūla, pippalyādi, vṛhatyādi, muṣkakādi, vacādi, surasādi*, and *āragbadhādi* (vide previous Table).

Classification of plant based on dietetic value

Suśruta has also classified plants according to their dietetic value into the following *vargas* (*Sū*. **46**, 5-52, 142-344).

Dhānyavarga (cereal group). It is divided into three sub-groups. These include:

Śālivarga (paddy group). It includes three types of rice-grains, viz. *śāli* (seventeen species), *ṣaṣṭika* (eleven species), and *vrīhi* (nine species).

Kudhānyavarga (inferior grain-cereals). Sixteen varieties are included. These are *koradūṣaka, śyāmāka, nīvāra, śāntanu, varaka, uddālaka, priyaṅgu, madhūlikā, nāndīmukhī, kuruvinda, gavedhuka, sara, varuka, todaparṇī, mukundaka*, and *veṇuyava*.

Śamīdhānyavarga (legumes). It includes ten varieties, viz. *vaidāla* (pulses, eleven species), *māṣa, kulattha, tila, yava, godhuma, śimba, kusumbha, atasī*, and *siddhārthaka*.

Phalavarga (fruit group). A number of fruits are included with their respective physiological actions.

Śākavarga (pot-herb group). A number of pot-herbs are included with their respective physiological actions.

Puṣpavarga (flower group). It includes: *kovidāra, śaṇa, śālmalī, vṛṣa, agastya, madhuśigru, karīra, raktavṛkṣa, nimba, muṣkaka, arka, asana, kuṭaja, padma, kumuda, mallikā, mālatī, vakula, pāṭalā, nāga, kuṅkuma, campaka, kiṃśuka*, and *kuraṇṭaka*.

Udbhidavarga (mushroom group). This group is divided into five sub-groups according to their place of origin:

Ikṣuja (which grow on stems of sugarcane). They are cooling in their potency.

Karīṣa (which vegetate on decomposed cowdung.) They aggravate the *vāyu* and are considered as heat-producing in their potency.

Kṣitija (which grow on the ground). They are heavy of digestion and do not inordinately generate *vāyu*.

Palala (which grow on stacks of straw). They subdue the three deranged humours.

Veṇuja (which vegetate on the stem of bamboos). They aggravate the *vāyu*.

Kandavarga (bulb group). The following bulbs of plants and creepers are recommended by Suśruta as edible: *vidārikanda, śatāvarī, visa* (bulbs of the lotus plant), *mṛṇāla* (the upper stem of the lotus plant), *śṛṅgāṭaka, piṇḍāluka, madhvāluka, hastyāluka, raktāluka, indīvara*, and *utpala*.

Identification and individual properties of each of the plants enumerated above in this chapter are given in Table III.

XIV

PHARMACOLOGY AND MATERIA MEDICA

A. Medicinal Substances

Oṣadhi dravyas (substances of medicinal value) may be classified according to their origin (*Sū.* 1, 22-24).

(i) *Sthāvara* (plants—subdivided into *vanaspati, vṛkṣa, vīrudha* and *oṣadhi*). The useful portions of this class of drugs are, *tvak* (bark), *patra* (leaf), *puṣpa* (flower), *phala* (fruit), *mūla* (root), *kanda* (bulb or rhizome), *niryāsa* (essential oil or expressed juice) and *rasa* (sap or resin).

(ii) *Jaṅgama* (living creatures—subdivided into *jarāyuja, aṇḍaja, svedaja* and *udbhijja*). The useful portions of this class are *carma* (skin), *nakha* (nail), *roma* (fur) and *rudhirādi* (blood and other bodily elements and secretions).

(iii) *Pārthiva* (minerals), is subdivided into *suvarṇādi* (gold, silver and other metals), *maṇi* (precious stones and mineral gems), *muktā* (pearl), *manaḥśilā* (realgar), *mṛt* (various types of clay deposits) and *kapāla* (bones and shells).

All drugs, whether of vegetable, animal, or mineral origin, must have the smell, appearance and other properties, normally ascribed to them. If they show any unusual features or give unusual smell, they should be rejected. Plants and herbs for medicinal use should be cultivated on grounds with desirable features. The surface should be even and unbroken, and the soil firm and free from gravels, stones or other foreign matter. The best type of soil for medicinal plants should be black, tawny, or yellowish brown in colour; free from sand, ash, or alkali; firm but sufficiently loose in texture to allow the roots to spread, and constantly supplied by water (*Sū.* 36, 2-3). Drugs collected should be free from admixture with weeds or foreign plants, and from parasitic growths or from worms. Apart from *pippalī* (*Piper longum*) and *viḍaṅga* (*Embelia ribes*), all vegetable matter should be used as fresh as possible. Substances of animal origin should be collected from young and healthy animals, and used as soon as possible after collection. But honey and *ghṛta* (clarified butter) should be matured for at least a year before use. Body secretions like milk, urine or stool should be collected at a time when the animal has completed the digestion of its food (*Sū.* 36, 11-13).

The five *mahābhūtas* (fundamental elements) enter into the composition of all substances. The ratio differs in each case and the predominance of any one of the elements in the substance determines its character, and hence its potential value as medicine. Hence every substance found in the world has some curative property or other and, when correctly prescribed in combination with other drugs, they are able to counteract deficiencies in the system, due to their inherent properties and potencies (*Sū.* **41**, 2, 8).

Drugs of the *pārthiva* (earth-predominant) class are *sthūla* (bulky), *sāra* (substantial), *sāndra* (dense), *manda* (slow-acting), *sthira* (stable), *guru* (heavy) and *kaṭhina* (hard) in their properties. They are *gandhabahula* (endowed with smells) and generally sweetish in taste, though sometimes astringent ; they impart *sthairya* (solidity), *bala* (strength), *saṃghāta* (toughness or resilience) and *upacaya* (weight) to the human body, and facilitate the downward movement of body excretions. Drugs of the *āpya* (water-predominant) class are *śīta* (cold), *stimita* (dull), *snigdha* (emollient), *manda* (slow-acting), *guru* (heavy), *mṛdu* (soft), *sara* (mobile), *sāndra* (compact), *picchila* (unctuous), and *rasabahula* (juicy). They have acid, saline, sweet or sometimes slightly astringent tastes. Physiologically they have *snehana* (emollient), *hlādana* (pleasant), *kledana* (moistening), *bandhana* (binding), and *viṣyandana* (exudating) properties. *Taijasa* (fire-predominant) drugs are *uṣṇa* (hot), *tīkṣṇa* (sharp), *sūkṣma* (permeating), *rūkṣa* (rough), *khara* (dry), *laghu* (light), *viśada* (non-slimy), and *rūpaguṇabahula* (bright). They are astringent or slightly bitter in taste. Physiologically they cause *dahana* (sensation of burning), *pacana* (digestive action), *dāraṇa* (bursting of abscess), *tāpana* (rise of temperature), *prakāśana* (improvement of vision), *prabhā* (improvement of complexion), and *varṇakara* (healthy glow). *Vāyavīya* (air-predominant) drugs are *sūkṣma* (subtle), *rūkṣa* (rough), *khara* (dry), *śiśira* (cold), *laghu* (light), *viśada* (non-slimy), and *sparśabahula* (tactile). Physiologically they cause *vaiśadya* (elimination of slimy character), *lāghava* (sense of lightness), *glapana* (sense of relaxation), *virūkṣaṇa* (desiccation), and *vicāraṇa* (physical activity). *Ākāśīya* (ether-predominant) drugs are *ślakṣṇa* (bland), *sūkṣma* (subtle), *mṛdu* (soft), *vyavāyi* (diffusive), *viśada* (non-slimy), and *vivikta* (porous). They are *avyaktarasa* (without any definite taste) and *śabdabahula* (sound sensible). Physiologically they cause *tanmārdava* (softness), *sauśīrya* (porosity), and *lāghava* (lightness) (*Sū.* **41**, 3-7).

The properties of a drug, namely, *rasa* (taste), *guṇa* (specific properties), *vīrya* (potency), *vipāka* (assimilability) and *prabhāva* (inherent nature) may vary in different samples, but its real character remains unchanged even after drying, pulverizing, pasting and other operations. *Rasa* is an important inherent property of substances. The pacification of deranged humours depend primarily upon this property, and hence drugs are also classified by their tastes. *Guṇa* is the inherent property of a drug causing a particular effect when used either internally or externally. *Vīrya* (potency) is also very important, as all physiological actions and curative values are dependent upon this factor; a drug which has lost its potency is unfit for use. *Vipāka* (assimilability) is also important, because a drug, irrespective of natural characteristics, taste, or potency, can become beneficial, harmful, or inactive, depending upon its assimilation in the digestive process. Suśruta mentions two types of digestion : *madhurapāka* (digestion resulting in a sweet chyle) which occurs when the diet is heavy and endowed with the attributes of earth and water; and *kaṭukapāka* (digestion resulting in a bitter chyle)

occurring when the diet is light and endowed with attributes of fire, air, or ether. *Prabhāva* is a peculiar active force residing in a drug, producing a characteristic physiological effect when taken internally, though it may be similar in the rest of the properties with some other drugs (*Sū*. 40).

Thus according to the text, the properties of a substance like taste, potency, assimilability, etc. co-operate in the curative action of any drug by augmenting, reducing or balancing any loss, excess, or derangement of the humours. These properties and consequent medicinal values are not subject to any known laws and cannot be foretold in a substance by deductive processes. They are recognized and known only by observations and applications through countless years. These observations and applications have been codified in the text books only when they have been found true after generations of careful study and experiments, and it is not within the competence of any physician to dispute this knowledge or try to introduce innovations, however logical or probable they might appear to him. The text lays down the dictum that there is no scope of individual experiment in prescribing drugs (*Sū*. 40, 18-20). Such a dictatorial statement, however, appears to betray an irrational attitude rare in the *Suśruta Saṃhitā*, and this is possibly a later interpolation in the text.

All substances except water (which is without any definite taste) can be broadly classified as sweet, acid, saline, pungent, bitter, or astringent in taste. These tastes result from the presence of the elements of earth, fire, air, and ether in variable quantities, along with water which serves as the origin of taste. Substances of sweet taste are agreeable to the palate, give a sense of well-being, and prolong life. They increase *kapha* (secretion of phlegm), *rasa* (formation of chyle), blood, flesh, fat, bone-marrow, *ojas* (vital essence), semen and breast milk; help the growth of bone and hair; improve eyesight and complexion ; help adhesion of fractured bones; and purify blood and other body fluids. They are specially valuable to infants, weak, old people and to patients suffering from ulcers or cardiac complaints. They exhilarate the mind and sense-organs, and relieve thirst, burning sensation and weakness. If taken in excess of bodily needs, they give rise to intestinal parasites, cough, hiccup, flatulence, nausea, hoarseness of voice, boils, elephantiasis, deposits of mucus in the bladder, slimy deposits in the rectal and vaginal passages, and eye diseases. Substances of acid taste cause increased salivation and a peculiar sensation on the teeth, and stimulate appetite and digestion. They relieve gas-formation or pain in the alimentary passage, help natural elimination of flatus, urine and stool, and promote digestion of food. If taken in excess, they cause flabbiness, suppuration of cuts and burns, formation of pus in body cavities, heart-burn, and burning sensations in the throat and bronchial regions. Saline substances cause increased salivation and relish for food, but are incompatible with substances of other tastes. They have purgative and emetic actions, increase body heat, and help in the spontaneous bursting of boils. They also cleanse internal passages and ducts in the body. If taken in excessive quantities they cause formation of pus, ulcer, softening of muscles and tissues, scabies, urticaria, oedema, sallow complexion, loss of virility, diminished sense-perceptions, inflammation of the eyes and oral area, haemoptysis, and a kind of persistent skin disease. Substances of pungent taste cause burning sensation at the tip of the tongue, aqueous discharges from the nose and headache. They have appetizing, digestive and purifying properties, and cure obesity, lassitude, intestinal parasites, and derange-

ments of the third humour. They are also sedative in action, reduce secretions of semen and breast milk, and give relief in persistent skin diseases. If taken in excess they cause vertigo, loss of consciousness, dryness in the mouth, high temperature and burning sensation on the skin, tremors, loss of strength, and pain in various parts of the body. Substances of bitter taste cause a sharp biting sensation in the mouth. They cleanse the oral area, and increase relish for food and digestive ability. They cure itches, urticaria, excessive thirst, fainting fits, and fever. They have a purifying action on breast milk, and disinfecting action on ulcers and wounds. They also reduce bodily secretions like urine, stool, mucus, oily fluids, pus, etc. Taken in excess they cause stiffness and loss of sensation in the limbs, general pain, and a bad taste in the mouth. Substances of astringent taste cause dryness of the mouth, a choking sensation in the throat, and a sense of pressure in the cardiac region. Physiologically they produce astringent, heating, styptic, purifying, liquefacient, drying, and contracting actions. If taken in excess they cause heart diseases, abdominal distension, loss of speech, stiffness of the neck muscles, contraction and rigidity of the limbs, and convulsions and throbbing sensations in various parts of the body (*Sū*. 42). The text points out that more than one of the six primary tastes are often present in one and the same substance. Fifteen mixed tastes are possible by combination of two tastes, twenty by three tastes, fifteen by four, and six by the combination of five tastes at a time. A substance can also have all the six primary tastes present together. Thus, together with the six primary tastes, there are sixty-three tastes possible (sixty-four, if water is considered), and substances of medicinal value can belong to any one of such primary or compound tastes (*Sū*. 42, 21).

Drugs have also been classified according to their major physiological properties. The two most important classes on this basis of classification are the emetic and purgative drugs; cleansing of the system by emesis and purgation being the two most important auxiliary treatments in Āyurvedic practice. Drugs with emetic properties are seldom applied singly. Compounding consists of drying and pulverizing the effective portions of the plants and pasting or emulsifying the powder with milk-curds, honey, macerated sesamum seeds, etc. and then adding water, honey, liquorice or alcohol to make a smooth and bland potion. Rock-salt is also a common ingredient of emetic preparations. These drugs should be taken warm on a full stomach. Small doses are given initially and repeated until the desired effect is obtained. The choice of the actual emetic drug and its preparation depends upon the disease, and the dosage depends upon the climate, season, and patient's constitution and physical condition. Purgative drugs are also used in different types of prescriptions, compounded with other substances of the same line. Their choice and dosage also depend upon the same factors. These two operations, emesis and purgation, form in Āyurveda the principal means of reducing any accumulation of morbid humours in the system and of bringing about a state of their healthy equilibrium. To obtain satisfactory results, it is essential to guard against insufficient or excessive medication, both of which are unpleasant in their consequences, and may cause definite harm to the system. For infants, aged persons, weak, convalescing and extremely nervous patients, mild administration by mechanical manipulation with fingers or flower stalks, or smelling flower petals, soaked with the pasty or liquid drugs, are recommended for emesis or purgation (*Sū*. 43; *Ci*. 33, 5-6).

Methods of compounding medicinal preparations with various drugs and substances, and their dosages, are given in many parts of the text. But it is made clear

that such preparations are valuable only for those inherent properties (taste, physical and chemical character, potency, ease of assimilation in the system, etc.), which make up deficiencies or counteract imbalances in the fundamental constituents of the body. Hence in each particular case the choice of drugs, as well as of their dosages, depend upon the condition and constitution of the patient, seasonal factors, and the severity of the imbalance involved. The text gives a list of ten specific modes for the administration of medicine. Medicine can be administered as : *nirbhakta* (taken on empty stomach), *prāgbhakta* (taken just before meals), *adhobhakta* (taken just after a meal), *madhyabhakta* (taken during a meal), *antarbhakta* (taken in between two major meals), *sabhakta* (taken mixed or compounded with ordinary food), *sāmudga* (taken immediately before and again immediately after a meal), *muhurmuhu* (taken at repeated intervals of time, irrespective of food), *grāsa* (subdivided into small portions and taken with every morsel or mouthful of a meal) and *grāsāntara* (subdivided and taken with alternate morsels). These timings are prescribed according to the nature and severity of the disease, as well as the physical condition and constitution of the patient (*Utt.* **64**, 23-33).

B. Applications of Substances in Medicinal Preparations

Suśruta recommends the use of medicinal drugs in seven forms for the cure of diseases. These include *kaṣāya* (decoction), *varti* (plug-stick), *kalka* (paste), *snehapāka* (particular method for the preparation of oleaginous substances, including clarified butter and oil —Suśruta has counted them separately), *rasa* (condensed extract of medicinal drugs), and *cūrṇa* (powder) (*Ci.* **1**, 22-23, 70).

(i) *Kaṣāya* (decoction): Barks, roots, leaves, or fruits of medicinal plants, dried in shade, cut into pieces or pounded, and soaked in a quantity of water (weighing eight to sixteen times of their combined weight), is boiled over a fire so long as the three-fourths of the original water is evaporated. This is the general rule for the preparation of *kaṣāya* (*Ci.* **31**, 9, 12).

Avaleha (soft extract) is a concentrated form of *kaṣāya* prepared by the powder of desired drugs and the extracts of the same drugs on being boiled together till the product becomes neither thick nor thin (*Ci.* **10**, 9 ; **12**, 9).

(ii) *Varti* (plug-stick): Two types of *vartis* are used. One in the form of stick for external use, and the other as pill for internal use. The stick is prepared either (a) from a piece of wool or cloth, covered with paste prepared from different substances (vegetable, and sometimes mineral products also) and then soaked in the decoction of disinfecting drugs; or (b) from medicinal plants admixed with other substances, pasted together by means of water or other liquids and given the form of a stick of different lengths as required. Leaves or barks of medicinal plants soaked in their own decoctions, till saturated, are sometimes used as *varti*. For internal use the paste is prepared by boiling different substances in cow's urine over gentle heat. This is then made into pills.

The *vartis* for external uses may be divided into two classes, on the basis of their functions. These are *śodhana* (aseptic), which prevents the wound from becoming septic by infection, and *ropaṇa* (healing), which serves as a healing agent (*Sū.* **5**, 13; **37**, 13, 19-25; *Ci.* **9**, 17; **14**, 15-16; *Utt.* **12**, 10).

(iii) *Kalka* (paste): Prepared from dried and powdered drugs by admixture with water or a suitable liquid (*Ci.* **1**, 70).

(iv) & (v) *Snehapāka* (preparation of oleaginous substances, containing oil and clarified butter): One part of *sneha* (oil or clarified butter), four parts of (any one or more) liquid substances (*drava*—milk or water; when there are more liquids to be used than one, the general rule is that the total weight of all the liquids would be four times than that of *sneha*), and four parts of the medicinal pastes (*bheṣaja-kalka*), are boiled together to make a medicated *sneha*.

Alternatively, one *kuḍava* (=112 gms.) of *sneha*, one *pala* (=28 gms.) of pressed paste, and liquid substances (milk or water—one-fourth of the weight of *sneha*) boiled together, makes the preparation of medicated *sneha* (*Ci.* **31**, 10, 13-14).

According to the temperature of the boiling of the desired substances, the preparation of *sneha*, is divided into three groups—*mṛdu* (mild), in which the oily liquid can be separated out easily from the product; *madhyama* (medium), in which the product becomes pellucid and non-sticky; *khara* (hard), in which the product becomes somewhat opaque, semi-liquid and black. The mild (*mṛdu*) medicated *sneha* is recommended for internal use, and those of the medium (*madhyama*) and strong (*khara*) types are prescribed for the external use (*Ci.* **31**, 16).

The direction for the use of medicated *sneha* in the treatment of different types of diseases is determined by the time taken for its digestion (*Ci.* **13**, 19).

(a) A *sneha* paste, which requires three hours for its digestion, is prescribed for slight aggravations of bodily *doṣas*, and is considered as appetizing.

(b) That which takes half a day, is prescribed in the moderate derangements of three humours; it is invigorating (*bṛṃhaṇa*).

(c) That which requires three quarter part of a day for its digestion, acts as an emollient (*snehanīya*) and is beneficial in severe derangement of humours.

(d) That which takes twelve hours, is efficacious for all affections of the body, including physical lassitude, fainting fits and delirious condition.

(e) That which requires a whole day and night to be digested without producing any kind of reaction in the stomach, is beneficial in *kuṣṭha* (cutaneous affections), insanity, poisoning and hysteric convulsion (*apasmāra*).

Methods for the preparation of various types of medicated oil and clarified butter (*snehapāka*) have been described in the text (*Ci.* **3-5**, **8**).

(vi) *Rasa* (condensed extract of drugs): In this preparation a decoction of desirable drugs is first made, and then boiled to a consistency of treacle. Mineral and vegetable substances are mixed in these preparations during boiling, when required.

The preparation is especially applied for external use (*Ci.* **1**, 22-23, 59, 68; *Utt.* **12**, 23).

(vii) *Cūrṇa* (pulverized product): Powder of the essential parts of the plants, belonging to a group, is saturated for seven days with the equal quantity of decoction of plants belonging to a separate group (having same properties with the former group). This is used as medicated *cūrṇa* (*Ci.* **10**, 3, 10; **12**, 10).

C. Some Important Medicinal Preparations

Drugs for internal uses

(i) *Ayaskṛti* (iron compound): Suśruta refers to three different types of *ayaskṛti*. In the first process, thin leaves of *tīkṣṇa loha* (steel) anointed with five kinds of salts,

are heated over cow dung fire, then immersed in a decoction of selected drugs. This operation is repeated sixteen times. It is heated and burnt again over the fire of *khadira* (*Acacia catechu*) wood, and finally, pounded into fine powder and sieved through a piece of thick linen.

In the second process an iron ball is heated to a red heat over the fire of *khadira* wood, then immersed in the expressed juice of selected medicinal plants. This operation is repeated twenty-one times in succession, and the ball is finally heated in the same plant juice over cow-dung fire until only a quarter part of the liquid remains. The liquid is separated by filtration from the iron mass. The latter is heated again in the original liquid substance (plant juice), mixed with a mixture of drugs (belonging to *pippalyādi* group) together with honey and clarified butter (weighing double the quantity of iron mass), and the product is preserved in a well-sealed iron pitcher. This preparation is called *auṣadha ayaskṛti*.

In the third preparation an iron-sheet is heated to a red heat, then immersed in a decoction of suitable drugs. The operation is repeated twenty-one times. The iron mass is finally preserved along with the powdered drugs of *pippalyādi* group, treacle and honey for one month during winter and a fortnight during summer in an earthen pitcher the interior part of which has been disinfected. This is called *mahauṣadha ayaskṛti* (iron compound of highest medicinal value) (*Ci.* **10**, 11-14).

In all these preparations the iron is evidently converted to its oxide or a salt.

(ii) Preparation of different medicated liquors, viz. *ariṣṭa*, *āsava*, and *surā*:

Ariṣṭa. Powder of selected drugs, water, iron powder and treacle (*guḍa*) are placed in an earthen jar, purified by fumigation and coated inside with a mixture of honey, clarified butter and powdered *pippalī*, and containing clarified butter. The vessel is then tightly sealed and is dipped in a mass of barley for fermentation (*Ci.* **10**, 6; **11**, 8).

Āsava. A mixture of three parts of cold alkaline water, prepared from the ash of either *palāśa* (*Butea frondosa*), or sesamum, or other desirable plant, and two parts of molasses (*phāṇita*) is fermentated like the previous one. Cow's urine is also used in place of alkaline water (*Ci.* **10**, 7; **11**, 8).

Surā. It is prepared from the decoction of desirable drugs and *surā-kiṇva* (enzyme) by distillation (*Ci.* **10**, 8).

All these medicated liquors are prescribed for internal use.

(iii) *Lavaṇa* (salts, specially prepared with vegetable products like leaves, barks, twigs and roots of plants). Equal weights of selected medicinal plants and rock-salt (*saindhava*), ground in a mortar, are kept in a closed pitcher along with an oily substance like oil, clarified butter, lard (*vasā*), and marrow (*majjā*). The pitcher is then plastered with cow dung and burnt over fire of the same (cow dung).

In some cases rock-salt and different parts of medicinal plants (root, leaves and twigs) are pounded in a mortar. The mixture is burnt in a sealed pitcher without the aid of any oily substance. The product is sieved and freed from the coarse and waste matter. It is then burnt again (*Ci.* **4**, 24-26).

Drugs for external applications

(i) *Ālepa* (plaster): An *ālepa* is composed of vegetable substances pasted together in clarified butter, or in cow's urine, and then boiled. Sometimes mineral substances along with plant products are pounded together in urine, or bile of cow for this purpose.

It is of three types, namely, *pralepa*, *pradeha*, and *ālepana* according to its thickness and consistency.

A medicated plaster of *pralepa* type is applied thin and cold. It may be of the absorbing (*viśoṣī*) or non-absorbing (*aviśoṣī*) character. It is beneficial in pacifying or restoring the deranged blood and *pitta*.

The *pradeha* type is applied either thick or thin, warm or cold. It acts as a non-absorbent. It is beneficial in deranged *vāyu* and *kapha*, adhesion of fractured bone (*sandhāna*), and in purification and healing of ulcers.

The *ālepana* type, otherwisely known as *kalka* or *niruddha-ālepana* (arrestive or astringent plaster), stands midway between the *pralepa* and *pradeha* in character. The thickness of this *ālepa* does not exceed the thickness of the newly flayed skin of a buffalo. It is specially effective for any type of ulcerous growth, for arresting a local haemorrhage, and for the derangement of three bodily *doṣas*. Its action lies principally in cleansing the skin, flesh and blood.

Use of all types of plaster is forbidden at night (*Sū.* **18**, 3-9; **37**, 1-11)

Upanāha (poultice). It is a kind of plaster, especially used in cases of abscess. In this preparation suitable medicinal plants, acid substances (either all kinds of acid fruits or sour-gruels), animal flesh, suitable for the purpose, and oily substances are mixed together (boiled only in case of hot poulticing) and wrapped in a piece of thin linen (*Sū.* **17**, 20; *Ci.* **5**, 8; **32**, 8).

(ii) *Añjana* (eye-salve): It is prepared from the suitable plant and mineral substances, and salt (when required) by being pasted with liquid or semi-liquid substances as intended for this purpose (*Utt.* **12**, 9-21).

Añjana is divided into three classes according to its medicinal uses—*lekhana* (scarifying), *ropaṇa* (healing), and *prasādana* (invigorating) (*Utt.* **18**, 27-30).

(a) *Lekhana* (scarifying). For this purpose *añjana* is prepared with drugs of one or more tastes (*rasa*) except the sweet one, on being pasted with liquid substances. It is used in five different ways according to the nature of *doṣa* or *doṣas* involved in different eye ailments. For diseases, due to aggravated *vāyu*, the *añjana* is prepared with drugs of acid and saline tastes; for diseases, due to deranged *pitta*, drugs of astringent taste is used; in *kapha* originated diseases, it is prepared with drugs of astringent, bitter and pungent tastes; in diseases due to the derangement of blood, drugs of astringent tastes are employed; in diseases due to the derangement of three *doṣas*, the *añjana* is prepared with drugs of two or three tastes.

(b) *Ropaṇa* (healing). *Añjana*, prepared with the drugs of bitter and astringent tastes by being admixed with a little quantity of clarified butter, is recommended for this purpose. It also gives natural colour and vigour to the eye.

(c) *Prasādana* (invigorating). *Añjana*, prescribed for this purpose, is prepared with drugs of sweet taste and an oily substance (clarified butter).

All types of *añjana* are used in three forms. These are *guṭikā* or *varti* (pill), *rasa* (condensed liquid), and *cūrṇa* (powder) (*Utt.* **18**, 31).

The *mātrās* (doses) of these three forms of *añjanas* are : *guṭikā* or *varti*, and *rasa*—one and half the weight of a *hareṇu* (*kalāya* pulse) ; *cūrṇa*—twice, thrice, or four times as much as could be taken at the end of a *śalākā* (thin rod) (*Utt.* **18**, 32).

Suśruta recommends the use of *añjana* in the morning, evening, or at night in accordance with the nature of the deranged humour or humours involved in each case (*Utt.* **18**, 30).

(iii) *Āścyotana* (eye-drop): Suśruta refers to two types of preparation of eye-drops. In one, powdered medicinal drugs, dipped in human milk, water, or sour-gruel and then tied in a piece of linen, is used for making drops for the eye (*Utt.* **10**, 6; **12**, 8, 13, 32).

In the other, animal flesh and rock-salt, soaked in clarified butter and mixed with *nāgara* (dry ginger) and breast milk, is tied in a linen. This is then used for the same purpose (*Utt.* **12**, 27).

Āścyotana is of three types according to the purpose of its use—

(a) *Lekhana*--(for the purpose of scraping the affected eye)—seven or eight drops are prescribed; (b) *snehana* (for the purpose of producing a soothing effect)—ten drops are prescribed; (c) *ropaṇa* (for the purpose of setting up a granulative process in a local sore)—twelve drops are recommended (*Utt.* **18**, 23).

Suśruta recommends the use of eye-drops for almost all types of eye diseases (*Utt.* **18**, 23).

XV

SURGERY

A. General Principles and Methods

Surgical treatment of any diseased condition consists of three processes, one after the other. These are:

1. *Pūrvakarma* (preparatory measures)

(i) The proper astral conjunction and auspicious moment are first selected. Propitiation of deities and priests, and chanting of hymns precede the physician's work. The physician first accepts his fees, or the gifts meant for him, and then thoroughly examines the patient to see whether his condition warrants immediate surgery. The patient is then placed in the posture most suitable for surgery and his limbs are securely held. In operations involving the removal of a dead foetus, in abdominal diseases requiring surgical treatment, in surgical treatment of piles and fistulas, in operations for the removal of urinary stones, and in operations of the mouth or the throat, the patient is kept fasting before the operation; in other cases he is given a light but nutritious meal.

(ii) The surgeon-physician satisfies himself by a personal check that the following aids and appliances are ready and within easy reach: scalpels and other sharp instruments (*śastra*); blunt instruments (*yantra*) like surgical pincers, forceps, specula,

etc.; fire (*agni*); surgical probes (*śalākā*); horns (*sṛṅga*), modified for surgical use; leeches (*jalaukā*); vessels made of dried gourds (*alābu*); pencil-shaped stone instrument with a serrated knob (*jambovouṣṭha*); cotton wool (*picu*) and plugs made thereof; clean linen or lint (*plota*); threads (*sūtra*) of various materials and thicknesses; leaves (*patra*); jute tow (*paṭṭa*); honey; clarified butter; lard; milk; vegetable oil; pulverized wheat soaked in water; alkaline solutions and astringent decoctions; setting plasters; pastes and ointments; fans; cold water; hot water; boiling vessels; trained nurse; attendants or surgical assistants. All instruments and appliances should be clean and bright (*Sū*. 5, 2-4, 12).

2. *Pradhānakarma* (principal measures including surgery)

(i) Depending upon the nature of the malady, one or more of the eight different types of surgical operations should be performed swiftly and without hesitation by a surgeon, who should not only have full knowledge and extensive experience of his science, but should also possess courage, self-confidence, and strong, capable and non-sweating hands. The eight types of surgical operations are : *chedana* (excisions), *bhedana* (incisions), *lekhana* (scraping, scarification, etc.), *eṣaṇa* (probing), *vedhana* (puncturing), *āharaṇa,* (extraction), *visrāvaṇa,* (draining of fluids), and *sīvana* (suturing).

(ii) Excisions should be sufficiently wide, deep and extensive. Vital parts, arteries, major veins, nerves, bones, joints and tendons should not be cut through. Excisions should be straight, angular, semi-circular or circular, depending upon the part operated upon.

For proper extraction of a removable part, or a foreign body, and for proper draining of pus, etc. the initial incision should be subsequently made deeper, or multiple incisions made later.

Pain and exhaustion of the patient are relieved by spraying cold water on the face.

(iii) The operated part is thoroughly freed from all morbid matter, pressed into shape by the surgeon's fingers, washed with astringent decoctions, and finally dried with clean linen.

(iv) A lint plug, previously soaked in healing drugs and covered with paste consisting of sesamum, honey and fat, is inserted deep into the cavity of the part operated upon.

(v) Medicinal paste is applied to cover the exposed surface of the wound.

(vi) Padding materials of soft, non-irritating and mildly cooling substances are placed on and around the operated surface, and a firm bandage placed on the limb.

(vii) The bandaged part is fumigated with fumes of anodynes and other drugs to prevent any extraneous adverse influences.

(viii) A second fumigation is carried out with an ignited mixture of the drugs: *guggula, vacā,* white mustard, leaves of the *nimba* tree, rock-salt and clarified butter. The residue from this ignited mixture is collected and rubbed over the heart and other vital parts of the patient.

(ix) The operation chamber is washed and thoroughly cleaned. Vedic incantations are recited in order to protect the patient from evil influences, and as soon as advisable, the patient is removed to a separate nursing chamber where he will remain until completely healed (*Sū*. 5, 3-15).

3. *Paścātkarma* (post-operative measures)

After the main surgical operation, and, while the patient is kept under observation in the nursing chamber, the following measures are prescribed to promote proper healing and rapid recovery.

(i) The bandage is not disturbed within forty-eight hours of the operation, as otherwise there would be unnecessary pain and the incised (operated) wound may be prematurely hardened on the surface layer.

(ii) The bandage is removed after a suitable interval, generally on the third day; the wound is cleaned and carefully examined for traces of pus or other morbid matter remaining inside the operated part. Such morbid matter may attack the surrounding healthy tissues and cause further damage. A fresh bandage is applied on a perfectly cleaned wound only.

(iii) Dressings and bandages are subsequently changed every other day in summer and rains, and every third day in the cool seasons. Proper healing is said to have set in, only when the interior and exterior are perfectly clean, healthy and free from pain. If the patient complains of local pain in a wound otherwise healed, an application of a warm paste of liquorice in boiled clarified butter is applied to relieve the pain.

(iv) A course of suitable medicinal drugs, its applications, and diet is also prescribed for the period of healing. In prescribing these items, the physician is guided by the condition of the wound, the nature of the malady, any possible complications or secondary symptoms, the strength and condition of the patient, and the season. The text repeatedly warns the physician not to hasten the surface healing of the operated part, which should heal from the inside out and not the other way round. Even after healing and as long as the tissues of the scar remain soft, the patient is advised to avoid rich food, physical exertions, sexual intercourse, and violent emotions of grief, fright, joy, etc.

(v) The physician must be always available on an emergency, or if the nurse or the attendant apprehend any danger to, or sudden deterioration, of the patient (*Sū.* 5, 16-21).

In consideration of the various possible surgical treatments for any particular case, the actual procedure to be followed is necessarily guided by the physician's knowledge, experience and intelligence. But broadly speaking, the procedures connected with the surgical treatment consists of one or more of twenty-four different methods (*Sū.* 7, 13). They are: *nirghātana* (withdrawing a probe after moving to and fro); *pūraṇa* (injecting into, or filling up, a cavity); *bandhana* (bandaging); *vyūhana* (raising the operable part into proper position); *vartana* (rotating or giving a swirling movement); *cālana* (transferring or transporting); *vivartana* (turning round, or making upside down); *vivaraṇa* (exposing); *pīḍana* (pressing); *mārga-viśodhana* (cleaning or draining a body canal); *vikarṣaṇa* (pulling out); *āharaṇa* (extracting); *āñchana* (lifting to the surface); *unnamana* (bending upwards); *vinamana* (bending downwards); *bhañjana* (applying pressure all round); *unmanthana* (stirring or churning up with a probe); *ācūṣaṇa* (sucking out); *eṣaṇa* (exploring); *dāraṇa* (splitting apart); *ṛjukaraṇa* (straightening out); *prakṣālana* (flushing or washing out); *pradhūma* (blowing fumes or fine powder inside a cavity); *pramārjana* (cleaning or scrubbing).

B. Practical Training of Surgeons

Suśruta makes it clear that theoretical knowledge, obtained from the preceptor through lectures and demonstrations, or by readings and discussions, however erudite and meticulous, is not sufficient qualification for the future surgeon. Practical training in the various surgical processes goes hand-in-hand with theoretical knowledge, and such practical training (*yogyāsūtrīya*) is declared to be essential for even those who are fully versed in theory (*Sū*. 9, 2).

Excisions are to be practised on fruits like *puṣpaphala* (*Benincasa cerifera*), *alābu*, (*Lagenaria vulgaris*), *kālindaka*, (*Citrulls vulgaris*), *trapusa* (*Cucumis sativus*), *urvāruka* (*Cucumis melo*) and *karkāru* (a species of *Benincasa cerifera*); incisions, on bladders and interior organs of dead animals, or on leather pouches filled with slime ; scarification and scraping, on hides covered with hair; the operation of puncturing, on veitns or recently dead animals or on stalks of the water-lily; that of probing, on worm-eaen branches of trees; extraction, on the pulp of *bilva* (*Aegle marmelos*), or of *bimbī* (*Coccinia indica*), or of jack fruit as followed for removing their seeds; dead animals were used for practising the extraction of teeth; draining technique was practised on *śālmalī* (*Shorea robusta*) branches, covered with a layer of wax to confine the exudations; that of suturing on thick cloth or leather; bandaging, on full-sized human figures shaped from clay and cloth; cauterization, on hides and flesh of animals; the use of catheters and specula, on spouts of vessels containing liquids; and the technique of compressing abscesses, on suitably shaped pieces of bottle-gourd (*Sū*. 9, 3).

Careful dissection of a dead human body is absolutely essential for gaining a detailed knowledge of the anatomy of the human body. Though the authoritative texts contain a detailed treatment of anatomy and physiology, direct personal observation and comparison is indispensable. A dead body for this purpose should be whole, not too old, not deformed or changed by prolonged illness or poisoning. The entrails of such a dead body should be first thoroughly cleaned out of all excrement present. The body should now be covered with layers of grass, securely bound with ropes and kept enclosed inside a cage in the water of a cool and solitary pool. After seven days the layers of skin, tissues, etc. are carefully scraped off, layer by layer, with bamboo splinters, hair, grass-roots, etc. and the various external and internal structures carefully noted (*Śā*. 5, 50-51).

C. Surgical Instruments

Surgical instruments and accessories are of four main types: *śastra* (cutting instruments), *yantra* (blunt instruments), *upayantra* (accessories), and *anuśastra* (minor instruments).

(i) *Śastra* (cutting instruments) of different designs are to be employed for different types of incisions, excisions, etc. They are twenty in number (*Sū*. 8, 2-3).

(a) *Kaṅkamukha* (an instrument with the working end shaped like heron's beak). For operation on parts which do not lie on the surface of the body, this particular instrument is highly recommended for many surgical processes. This instrument has the advantage that it can be inserted and taken out without any difficulty, manipulated

with great delicacy and precision, used on all parts of the body and even on difficult parts like major blood-vessels and joints.

(b) *Maṇḍalāgra* (an instrument with a disc-shaped blade) is to be used for scraping, scarifying and incising operations.

(c) *Karapatra* (saw) is to be used for operations involving sawing.

(d) *Vṛddhipatra* (razor-blade), *ardhadhāra* (scalpel), *mudrikā* (instrument with the cutting edge shaped like a bent finger), *nakhaśastra* (instrument shaped like a flat nail parer), and *utpalapatra* (instrument with a blade shaped like a lotus leaf) are to be used for incisions and excisions.

(e) *Kuśapatra* (instrument with the cutting edges shaped like grass-blades), *āṭimukha* (instrument with the working end shaped like the beak of a bird of a certain species), *śarārimukha* (scissors with edges shaped like the bills of the skimmer bird), *trikūrcaka* (instrument with semi-circular and toothed cutting edges) and *sūcī* (needles of various sizes and cross-sections) are to be used for drawing of fluids.

(f) *Kuṭhārikā* (axe-shaped instrument), *vrīhimukha* (instrument with ends shaped like seeds with small thorny projections), *ārā* (awls), *vetasapatra* (scalpel with blades shaped like grass of the ratan-cane) as well as needles, are to be used for puncturing.

(g) *Vaḍiśa* (sharp hook) is to be used for extraction of foreign bodies.

(h) *Dantaśaṅku* (dental forcep) is to be used for extraction of teeth.

(i) *Eṣaṇī* (surgical probe) with ends shaped like the head of an earth-worm is to be used for probing and for searching the course of pus-formation in an infected part.

(j) *Sūcī* (needle with eyes) is to be used for suturing.

The proper modes for holding and using the instruments are described in the text.

(ii) *Yantras* (blunt instruments) are one hundred of different varieties. The hands of the surgeon should also be included in this category as instruments, and in fact they are said to be foremost in this class as they are employed in every case. The hundred *yantras* are divided into six main types (*Sū*. 7, 3-12).

(a) *Svastikāyantra* (cruciform pincers) of twenty-four different varieties, measuring approximately fourteen inches from end to end. The two arms hinge upon a small bolt, and are bent inwards near the ends in the shape of an elephant driver's goad (*aṅkuśa*). The extremities at the working ends are shaped like the heads of various beasts and birds of prey from whom the various varieties derive their names. They are to be used for the removal of foreign bodies or of malignant growths on bones.

(b) *Sandaṃśayantra* (gripping instruments) of two varieties—one with, and the other without, a pivot. These are to be used in operations on the skin surface, muscles, veins, nerves and tendons. They generally measure about twelve inches.

(c) *Tālayantra* (discs with handles) of two varieties,—one with a single, the other with a pair of, disc shaped like fish scales. They measure about nine inches and are to be used inside the nose, ears and other orifices of the body.

(d) *Nāḍīyantra* (tubular appliances) of twenty different varieties according to shape, size and cross-section and designed for specific uses in the different organs and orifices of the body. These have generally apertures running from one end to the other, but with only one opening in some cases. They are used for probing and inspecting the seat of damage in tumours, sores, abscesses, piles, anal fistula, ascites and

hydrocele; for suction and injection of liquids from, and into, bodily orifices; for relieving strictures in the urinary and rectal passages; and for introducing medicated fumes into the inner parts of the body. Gourd instruments (*alābuyantra*) and horn instruments (*śṛṅga*) used for cupping and other local applications are included in this class in the text.

(e) *Śalākāyantra* (thin rod-shaped probes) of twenty-eight different shapes and sizes according to specific needs. Each type consists of a pair, one being left handed and the other right handed. Their working ends are shaped like earth-worms, shafts of arrows, hoods of cobras and other snakes, fish-hooks, split pea-pods, etc. according to their different purposes like probing (*eṣaṇa*), lifting (*vyūhana*), transferring (*cālana*) and extracting (*āharaṇa*). For cleansing the pus from the affected parts, the ends should be covered with lint. Some varieties have spoon-shaped ends, with conical cavities, for introducing caustics and solutions; some have serrated heads as on the surface of a jack-fruit, or ends shaped like elephant goads, and are meant for application of the cautery; one pair ends in a conical shape with sharp edges and is used for the removal of polyps and growths from inside the nasal passage; another pair, meant for use inside the eyelids and for local application on the eyes, have their working ends shaped like small flower-buds, about a millimetre in thickness. For probing the urethral passage, a *śalākā* shaped like the stem of a flower is used.

Instruments used in surgery are fashioned out of hard metal (*lauha*) or a suitable substitute. They are constructed according to directions given in authoritative medical treatises, or from oral instructions obtained from experts, or by copying from existing models, or by individual modifications of standard shapes to specific needs. Such instruments should be tough and correctly shaped, and with firm handles or grips where necessary. Their ends must conform to designs. If such instruments are too long, too short, distorted, angular and ill-proportioned, bulging, made of metal of inferior quality, liable to bend under stress, lacking in properly shaped handles or grips, slack at the joints or axis-pins, or lacking in free-play and movement, or are rusty, they should not be used for surgical operations (*Sū*. **7**, 3-5, 8,15). Iron instruments should be subjected to tempering (*pāyana*) with alkaline solutions, oil, or plain water, according to the nature of the metal. Sharp instruments should be given a keen edge by honing on slabs of special stones, and kept in receptacles when not in use (*Sū*. **8**, 9).

(iii) *Upayantra* (accessory appliances) should always be kept ready before a surgical operation begins. A list of such *upayantras* is given in the text. This list includes fine ropes, strong threads, braided twines, jute tow, thongs or straps of leather, inner barks of trees and creepers, linen and cloth, large stones and smaller pebbles, hammer, loadstone, caustics, horse mane, human hair, appropriate medicaments and fire. The surgeon's (and helper's) hands, feet, fingers, toes, tongue, teeth, lips and nails are also included in the list of accessories (*Sū*. **7**, 11).

(iv) *Anuśastra* (minor instruments), which are also to be kept at hand, include bamboo splinters, pieces of crystals, glass, water-lilies, leeches, nail parings, leaves of various plants, young shoots of corn and wheat and finger-rings. These are to be used in special cases, as substitutes for proper instruments and for delicate operations on young children and nervous patients (*Sū*. **8**, 11, 12).

D. Surgical Importance of Certain Vulnerable Parts

Suśruta mentions a number of vulnerable parts in the human body, which are of extreme importance in surgery. These are centres where veins, arteries, ligaments, joints and muscles unite together to form a special type of plexus, known as *marma* (mortal spots). Any injury to a *marma* is attended with serious results. There are eleven *māṃsamarmas*, forty-one *śirāmarmas*, twenty-seven *śnāyumarmas*, eight *asthimarmas* and twenty *sandhimarmas*, in which the muscles, veins and arteries, tendons and ligaments, bones and joints are respectively predominant, making a total of one hundred and seven *marmas*. These *marmas* are distributed all over the body; each arm and leg, containing eleven; the chest and abdomen, twelve; the back, fourteen; and the supra-clavicle parts, thirty-seven. A complete list of them with locations and characteristics is given in the text. The number of *marmas*, given by Suśruta, far exceeds the number of plexus-centres, known to modern science. Among these *marmas* some are particularly important, as grave injury to any of them may lead to a fatal end within a few hours. To this class belong the heart, jugular veins, umbilicus, bladder and anus. Some other *marmas*, when injured, may cause death after a period of some days. There are a few others, injury to which by an arrow, spear or other embedded foreign matter, may cause death, if the latter are forcibly withdrawn. Others, when injured, can similarly cause permanent deformity, or incurable wounds, or excessive pain (*Śā*. **6**, 1-4, 15-16).

All such *marmas* are carefully avoided in surgical operations. The surgeon must always keep in mind the exact location and dimensions of each *marma*, and, when making an incision, keep a minimum margin so as not to injure even their sides or edges. It is explained that even the amputation of an entire hand or leg (which itself contains many *marmas*) need not prove fatal if the incisions are made in such a way as not to fatally injure any *marma*. In other words, the human body can survive the loss of some parts containing many uninjured *marmas*; but if any *marma*, forming part of the living system, is gravely injured, the result is much more serious and death may follow. The text asserts that a skilful surgeon can carry out such an amputative operation with very little attendant haemorrhage, if the *marmas* are avoided. After the operation the vessels and affected parts contract and ultimately heal, like a tree whose branch has been lopped off. But, just as severe injury to the roots cause a tree to wither and die, a man, whose *marmas* have been gravely injured, suffers excessive haemorrhage, unbearable pain, aggravation of the *vāyu* humour, and dies ultimately (*Śā*. **6**, 81-82).

Again, a serious fracture, head injury, intestinal perforation, protrusion of vital organs from wounds in the body, or accidental severance of a limb by weapons, need not prove fatal and can be cured by proper treatment, if such an injury is not attended with destruction or grave injury of any local *marma*. The text also lays stress on the fact that extreme skill and experience are required of a surgeon in order to diagnose a *marma* injury, as such injuries are not attended with any immediate apparent symptoms. This extreme importance of *marmas* in surgical knowledge is due to the fact that they are the seats where *vāyu*, *soma* and *tejas* (i.e. airy, placid and fiery principles), as well as the three fundamental *guṇas* (*sattva*, *rajas* and *tamas*) of the living organism are located together. Hence after a serious injury to a *marma*, even if death be averted by surgeon's skill, deformity or permanent injury is sure to result; and even a minor injury to a

marma may cause such serious consequences as severe haemorrhage, intense pain, loss of consciousness and torpor. Suśruta boldly asserts that a thorough knowledge of *marmas* constitute a major part of all surgical knowledge (*Śā.* **6**, 82-86).

Out of the seven hundred minor *śirās*, there are ninety-eight which are specially vulnerable and are therefore of great importance in surgery. They should not be opened, severed, or pierced on any account while surgical operations are being carried out, as such operations may cause permanent injury or even death. The text gives the name and location of each of these ninety-eight vulnerable *śirās* (*Śā.* **7**, 14-31).

E. Special Surgical Methods

Application of the cautery

Cauterization by the application of heat (*agnikarma*) and alkaline fluids (*kṣārakarma*) is included among the minor surgical methods in Suśruta's text. The first is able to effect a permanent cure in many surgical conditions and, as such, is considered superior to cauterization by alkalis. It is also considered an indispensable method for stopping severe haemorrhage, which cannot be checked by normal treatment.

Agnikarma (cauterization by application of heat) is of two types : surface cauterization, and cauterization of deep-seated tissues or internal organs. The heat is applied by heated implements of *itara-lauha* (non-ferrous metals like silver, copper, bronze, etc.), or by the heated teeth of cows or bulls. The actual shape of the cauterized part may be circular (*valaya*), extensive (*pratisāraṇa*), or limited to a small area (*bindu*), depending upon the site and the nature of the affection (*Sū.* **12**, 1-2, 9).

Kṣārakarma (alkali-cauterization) is classed among the surgical processes. Alkalis or pot ashes (*kṣāra*) have two kinds of application in surgery, external and internal. On the exterior surface of the body, alkalis produce corrosion (*vilayana*), removal of surface layers and cleansing (*śodhana*), granulation of ulcerated tissues (*ropaṇa*), drying (*śoṣaṇa*), softening and liquefaction of tissues (*lekhana*) and haemostasis (*stambhana*). In the concentrated or strong form, they destroy skin and bodily tissues. Internally they are acrid and bitter (*kaṭuka*), hot (*uṣṇa*), pungent (*tīkṣṇa*) and digestive (*pācana*). Taken in small doses they cure toxic conditions, destroy worms inside the body, cause excessive secretion of phlegm and mucus, cure skin diseases and obesity. In large doses they cause sexual impotence (*Sū.* **11**, 3-4).

Caustics are used as substitutes for surgical operations in certain conditions, where the patient is unable to undergo an operation, or where the condition is amenable to this mild measure. The solutions used are weak, medium, or strong, according to conditions, and filtered immediately before use. When the patient is senile, weak, very young, or suffering from fever, internal haemorrhage, biliousness, giddiness, fainting and intoxication or similar conditions, caustics can be used only for external applications (*Sū.* **11**, 5-6).

Suśruta describes in detail the preparation of the three types of alkaline solutions—weak (*mṛdu*), medium (*madhyama*), and strong (*tīkṣṇa*). The choice of the wood (of branches) along with roots, fruits and leaves to be burnt is limited to twenty-four different trees listed in the text : *kuṭaja* (*Holarrhena antidysentrica*), *palāśa* (*Butea*

frondosa), *aśvakarṇa*, *pāribhadraka* (*Erythrina indica*), *vibhītaka* (*Terminalia belerica*), *āragbadha* (*Cassia fistula*), *tilvaka* (*Symplocos racemosa*), *arka* (*Calotropis gigantea*), *snuhī* (*Euphorbia neriifolia*), *apāmārga* (*Achyranthes aspera*), *pāṭalā* (*Sterospermum suaveolens*), *naktamāla* (*Pongamia glabra*), *vṛṣā* (*Justicia adhatoda*), *kadalī* (*Musa sapientum*), *citraka* (*Plumbago zeylanica*), *pūtika* (*Basella rubra*), *indravṛkṣa* (a variety of *Holarrhena antidysentrica*), *āsphota* (*Salvadora persica*), *aśvamāraka* (*Nerium odorum*), *saptacchada* (*Alstonia scholaris*), *agnimantha* (*Premna integrifolia*), *guñjā* (*Abrus precatorius*), and four varieties of *kośātakī* (*Luffa amara*). The branches of a mature, large, and healthy tree of approved variety should be cut into pieces, dried, and burnt in a pit after covering with limestone. The fire is started with stalks of the *tila* (sesamum) plant. The ashes and the hard cindered particles, found in the pit after incineration, are separately collected. The ashes are lixiviated with six parts by weight of water (or cow's urine), strained repeatedly through cloth filters, and the filtrate concentrated by boiling in an open iron vessel and by stirring frequently with a ladle. The heating is stopped when the liquid appears reddish in colour, clear, pungent smelling, and soapy to the fingers. The clear, supernatant liquid is decanted into iron jars, and solid residue being rejected. The mouths of the iron storage vessels are securely sealed to prevent further contact with air. The liquid thus prepared is of the mild variety.

Eight *palas* (one-fourth of a seer) each of banduc nut, of all the hard cindery particles separately collected from the burning-pit in the previous process of powdered conch shells and shells of fresh-water bivalves are raised to red-heat in an iron pan. The mixture is moistened with three quarters of a seer of the above-mentioned mild alkali solution and reduced to powder. This is added to the sixty-four seers of the said mild alkali solution. The mixture is then boiled with continuous stirring until the liquid becomes syrupy. The vessel is now removed from the fire and slightly cooled. The liquid is now immediately decanted into an iron vessel, filling it upto the neck, so that the cover can be sealed without leaving any air-space. The alkali solution, thus prepared, is of medium strength.

Strong alkali is made from mild alkali solution by a similar method but with the further addition of certain powdered plants and minerals, about fifty grams each of the powders of some dried plants and of powdered calcined crude salt and alkaline earths, added before boiling. The plants are, *dantī* (*Baliospermum montanum*), *dravantī* (*Anthericum tuberosum*), *citraka* (*Plumbago zeylanica*), *lāṅgalakī* (*Gloriosa superba*), *tālapatrī* (*Curculigo orchioides*), *pūtika* (*Basella rubra*), *hiṅgu* (*Ferula asafoetida*), *kanakakṣīrī* (*Cleome felina*), *vacā* (*Acorus calamus*), and *ativiṣā* (*Aconitum heterophyllum*) (*Sū*, **11**, 6-10).

Blood-letting (*Śoṇitāvasecana*)

Blood-letting is considered beneficial in many conditions like blood-poisoning, bites of poisonous animals and insects, suppurated or complicated wounds, in certain diseases and in all cases where the physicians consider it necessary to relieve the patient of vitiated blood. Apart from surgical opening of veins (*sirāvyadha*), three methods of blood-letting are recommended : application of leeches in *pitta* disorders, cupping with gourd vessels in *kapha* disorders, and suction by implements made from hollowed animal horns in *vāyu* disorders (*Sū*. **13**, 2, 4).

Cupping by gourd appliances (*alābuyantra*) is carried out by keeping a flame inside the *yantra*, held in position over two or three superficial excisions (*pracchita*) made on the affected part (or a chosen area). In the case of horn appliances (*śṛṅga*), the wider opening is held over the operated part and a steady suction applied by the mouth through the other narrower end, covered with fine cloth (*Sū*. **13**, 5-7).

Preliminary surgical operations are not necessary for the application of leeches, unless the leeches refuse to bite or suck. In the latter case, drops of milk or blood are used as bait. Incisions are made only when all other methods fail. In this method of blood-letting, leeches of known non-poisonous varieties, previously moistened in a saturated decoction of mustard-seeds and turmeric and then rinsed in clean water, are employed. Wet strips of linen are used to swathe the bodies of the leeches during application. Completion of sucking is indicated when the necks of the creatures assume a raised arch-shaped appearance. Bleeding is continued until the patient feels an itching and painful sensation. This sensation is declared to be indicative of draining of fresh and wholesome blood and is not felt as long as vitiated blood is sucked. The leeches are removed by the application of powdered rock-salt. The leeches sometimes fall of as soon as they are satisfied. The wound is then rubbed with honey, washed in fresh cold water, moistened with astringent liquids until the bleeding stops, and finally bandaged after the application of a cooling plaster (*Sū*. **13**, 17-20).

Jalaukas (literally meaning water-dwellers), or leeches, are distinguished into two different species : venomous and non-venomous. The venomous species should not be used for blood-letting.

Venomous species

Kṛṣṇa leeches are marked by thick heads and have a colour resembling powdered lampblack.

Karvura leeches have elongated and spatulated bodies, thick in the middle region. They have bodies with round and separated joints.

Alagarda leeches are thick and hairy with rounded ends. They are black with black mouths.

Indrāyudha leeches are covered on the surface with bands resembling a rainbow. They are extremely venomous and a bite may prove fatal.

Sāmudrika leeches are blackish-yellow, dotted all over with white spots. They are of various shapes.

Gocandana leeches have narrow mouths and are shaped at the lower end like the bifurcated scrotal sac of a bull.

All leeches of the venomous types breed in pools of stagnant and turbid water containing decomposed urine and excreta, where toads and poisonous fishes abound. A person bitten by a poisonous leech feels an irresistible itching sensation at the bitten part, which rapidly swells up. The after-effects are a burning sensation, fever, a feeling of nausea, torpor, delirium, and ultimately loss of consciousness (*Sū*. **13**, 8-10).

Non-venomous species

Kapila leeches, which are coloured like realgar at the sides but their backs are greenish blue.

Piṅgala leeches, which are of a reddish colour, are rounded in shape, an are capable of very fast speed.

Sankhamukhī leeches, which have liver coloured bodies.

Mūṣika leeches, which are coloured and shaped like common mice and emit a foetid smell from their bodies.

Puṇḍarīkamukha leeches, which are yellowish in colour and have mouths shaped like full-blown lotus flowers.

Śāvarikā leeches, which are coloured like lotus leaves. They are very big, measuring upto eighteen digits or more, and are very cold to the touch. They draw excessively large quantities of blood and should only be used for treating the domestic animals.

Non-venomous leeches breed in clear waters. They live on decomposed vegetable matter, specially the stems of aquatic plants, and organisms. They are generally to be found on the leaves of flowering aquatic plants. They should be captured by using a bag-like appliance (like a piece of wet leather, etc.) and stored in a pitcher containing water and slime from a pool. For prolonged storing, they should be given powder of dried meat, and leaves and bulbs of aquatic plants should also be thrown inside the pitchers (*Sū*. **13**, 8-15).

Immediately after use, the leeches should be dusted over with rice powder, and a composition of oil and common salt applied to their mouths. Then they are made to disgorge the sucked blood completely by holding them upside down and squeezing their bodies from the tail to the mouth. They should be stored in a new pitcher containing water, until further use (*Sū*. **13**, 17).

Venesection (*śirāvyadha*): It is considered as one of the minor surgical operations and is to be applied when the surgeon considers it more suitable than the previously described methods. Except in emergencies, surgical blood-letting is considered unsuitable for infants, for senile, emaciated, fatigued, nervous or weak persons, for habitual drunkards, for persons who are addicted to sexual excesses or are impotent, and for patients suffering from certain diseases mentioned in the text (*Śā*. **8**, 1-4).

In an operation for venesection the local surface should be fomented and anointed with medicated oils, and the patient given liquid food and gruels of the kind which subdue deranged humours. The patient is made to sit or lie down in the recommended position, and bandages or constrictions of suitable materials are applied in such a manner that the vein swells and stands out. The patient is asked to inhale deeply and not to exhale while the operation is carried out. The surgeon opens the vein with a sharp lancet, taking care not to injure any adjacent *marma* (vital part). The depth of the excision should be equal to half a barley corn (2-3 millimetre) for surface veins and greater for veins embedded in muscles and fatty tissues. A *kuṭhārikā* (small surgical axe) should be used when the vein passes over a bone (*Śa*. **8**, 5-19). The amount of blood allowed to flow out depends on individual cases ; but even for a healthy adult male it should not exceed a *prastha* (13½ *palas*), or 250 c.c. approx. Depending upon the disease or condition, different locations and technique of venesection are recommended in the text. The greater skill and long practice are required for this operation, as the veins are mobile and change their positions like fishes in water. A defective venesection is attended with grave dangers. A period of rest and a light nutritious diet are prescribed until the patient is fully restored in strength (*Śā*. **8**, 20-56).

Removal of foreign bodies and obstructions (*śalyaśastra*)

It is a special branch of surgery, dealing with the removal of different types of

embedded materials (*śalya*) which cause irritation, or inflammatory swellings, or impede circulation of the body fluids. Such *śalyas* may be intrinsic or extrinsic in origin. Internal (*śārīra*) *śalyas* include hairs, nails, blood-clots, uneliminated excrements, and local accumulations of deranged *vāyu, pitta*, or *kapha*. External (*āgantuka*) *śalyas* include foreign matters like pieces of metals, bones, grass, thorns, bamboo, splinters, horns, etc. The most important members of this class are spears and arrows made of iron, as they are used as weapons from a distance. Iron, being capable of taking a sharp point, is often firmly embedded in the body. Such weapons may penetrate the surface of the body and damage arteries, veins, internal organs, bodily orifices and bones, causing pain, dark cloured swellings, soft to touch, darkness of the affected skin, bleedings and suppuration (*Sū*. **26,** 2-8).

Splinters of wood, grass-stems, thorns, bamboo pieces, etc. cause putrefaction of the flesh and blood. They should be speedily removed. Hair, bone, particles of stone, shards, etc. remain unchanged in the body, and it is less dangerous to delay their removal than metals which react with the bodily tissues by the heating and cooling action of *pitta*, and are liable to be dissolved or assimilated in the body (*Sū*. **26,** 12-15).

Various means are effective for the removal of different types (*baddha*—firmly fixed and *anabaddha*—loose) of *śalya*. Such methods are listed below.

(i) Utilization of the natural functions of the body (*svabhāva*): lachrymation expels particles from the eyes ; sneezing, from the nose ; eructation and coughing, from the throat ; urination, emission of wind, and bowel movement, from the lower organs ; and vomiting, from the stomach. Breathing forcibly upwards through the nostrils (*utkāśa*) can expel food particles or splinters in the breathing passage. Vomiting (*vamana*) can be induced by thrusting a finger (*pratimarśa*) into the throat or epiglottis of the patient. Purgatives (*virecana*) induce bowel movement.

(ii) Suppuration (*pācana*) in the locality of the *śalya* : softening of the putrid tissues loosens the *śalya* which can then be removed or extracted by suitable means.

(iii) Incision (*bhedana*) by surgical instrument.

(iv) Bursting the wound (*dāraṇa*).

(v) Squeezing (*pīḍana*).

(vi) Vigorous rubbing (*pramārjana*).

(vii) Blowing in air or spray of cold water into the affected part (*nirdhmāpana*).

(viii) Flushing with water (*prakṣālana*).

(ix) Digital friction and manipulation (*pratimarśa*).

(x) Forcible extraction by muscular straining (*pravāhaṇa*).

(xi) Suction (*ācūṣaṇa*).

(xii) Application of a magnet (*ayaskānta*).

(xiii) Pushing the sharp end further in the direction of penetration, and removing the *śalya* from the new exit (*anuloma*).

(xiv) Direct extraction by suitable means, in a direction contrary to the mode of entry (*pratiloma*) : For such extractions surgical instruments, probes, twine bound to the exposed end, gripping implements, bent bows, high and tough branches of trees bent and bound downwards, or even harnessed horses

may be employed, depending upon the firmness with which a weapon is lodged.

(xv) Cutting all around the *śalya*.

(xvi) Skilful use of a hammer or stone.

(xvii) Enlarging the opening by inserting a metallic tube and then using a probe.

(xviii) Using a probe, one end of which has been dipped in molten wax (*Sū*. 27).

Surgical grafting

The term *Karṇavyadhabandhavidhi*, used in the *Suśruta Saṃhitā*, denotes various processes for plastic surgery on the outer ears, having congenital defects or when otherwise damaged. The text describes different types of grafting operations according to the nature of deformations, or injuries, of the outer ear. Some methods have been prescribed for ear lobes, bifurcated due to faulty methods of ceremonial piercing; some for accidental injuries; and some for amputation of the lobe, a common punishment in those times for gross offences. Congenital malformations which could be remedied by plastic surgery, include conditions like complete detachment of the flaps of the outer ears, or very short, or completely absent ear lobes; shrivelled lobes, knotty or bulbous lobes, and visible dissymmetry of the right and left ears. Suśruta points out that the number of possible conditions requiring surgical interference is very large and each requires specialized treatment by skilled surgeons. The text however enumerates fifteen different types of operations. Some of these methods are described in the text. They all employ the fundamental principle of modern plastic surgery, i.e. the grafting of a semi-detached flap of living skin from an adjoining part of the patient's body. This flap was left connected to its original site until the other end had been incorporated into the site of the affected part, after which necessary separation and trimmings were made. Processes are described and medicines prescribed for obtaining a healthy skin surface at the operated areas.

In all such grafting operations, the surgeon, equipped with proper instruments and medicaments, first draws a sample of blood from the site of the intended operation and assures himself that the blood is pure, healthy and normal. He then thoroughly cleanses the part with alcoholic liquids and warm water. The patient is held firmly by assistants, while the surgeon skilfully slices off a patch of healthy skin and flesh of the proper shape and size from the adjoining surface of the patient's cheek, being careful not to make a complete separation, and leaving a hanging flap. The damaged or deformed lobe of the ear is now scraped and scarified with appropriate instruments until the flesh is bare and bleeding. The free end of the cheek-flap which is also exposed and bleeding, is now attached to the scrapped and scarified area in such a way that the required shape and size is obtained as nearly as practicable. This shaping generally requires cutting and clipping of the skin tissues and flaps until a resemblance to the desired shape is obtained. When the two pieces have been pressed together firmly and properly, the joined part is anointed with a mixture of honey and clarified butter, covered with cotton-wool and then with linen strips, and finally secured in position carefully, but not tightly, with bandages. Powdered baked-clay is sprinkled liberally on the outer surface of the bandage to keep it dry. The patient is now allowed to rest, and the surgeon gives detailed instructions for proper diet and nursing. The patient is required to avoid strain, hard work, exposure, injuries, dissipations, etc. and not to disturb the

bandage, but is otherwise free to follow his normal activities. Every third day, the bandage is removed by the surgeon and the wound examined carefully against the possibility of formation of pus, ulceration or dark coloured swellings—the latter being an indication of undesirable healing on the surface with blood trapped inside. If any of these defects occur, it is immediately looked after, as otherwise the grafted part will be misshaped or ulcerated. When normal healing is found to progress satisfactorily, the surgeon cleanses the area, applies some unboiled vegetable oil on the surface, and then makes a fresh bandage for the next two days. In proper time, when the graft is found to adhere firmly and is healed, the newly formed skin tissue is carefully examined to see whether it is dry, even and smooth on the entire surface and painless to the touch, showing fine hairs growing from the pores. If everything goes well, the surgeon makes the necessary final adjustments to get the desired shape as far as possible. When the parts are finally healed, the newly formed surfaces are carefully and repeatedly massaged with special unguents to give shape to the fresh tissues. Such an unguent was made out of milk, the fat and marrow of *godhā* (iguana) lizards, or the fat and marrow of birds and animals of the *pratuda*, *viṣkira*, *ānūpa* or *audraka* classes, vegetable oil from seeds of the white mustard (*Sinapis alba*), boiled with decoctions of *arka*, (*Calotropis gigantea*), *alarka* (white variety of *Calotropis gigantea*), *balā* (*Sida cordifolia*), *atibalā* (*Sida rhombofolia*), *apāmārga* (*Achyranthes aspera*), *aśvagandhā* (*Withania somnifera*), *vidārigandhā* (*Desmodium gangeticum*), *kṣīraśuklā* (*Ipomoea digitata*), *jalaśuka* (*Commelina salicifolia*), and other plants of the *madhura* (sweet digesting) class.

This unguent helps a firm and steady growth of tissues, which enable the parts to be moulded into the desired shape and size. If it was considered necessary to elongate, spread, enlarge, or develop any particular portion, a special unguent prepared by boiling white mustard-seed oil with *śatāvarī* (*Asparagus racemosus*), *payasyā* (*Ipomea digitata*), *eraṇḍa* (*Ricinus communis*) *jayantī*, and milk was used (*Sū.* **16**, 1-18).

The term *Viśleṣitanāsikāsandhāna* denotes processes of surgical grafting for the reshaping of a deformed nose, and specially for the surgical rebuilding of a nose which had been cut off. The cutting off of noses was not an uncommon practice in those times for penal reasons or otherwise. The grafting operation for building up of a new nose from available skin and fleshy tissues of the surrounding area, is described in the text. The remnant of the severed nose is first completely covered with a sufficiently long and broad leaf of a suitable creeper, which is cut into the desired shape and contour. With this shaped leaf as guide, flaps are cut in an oblique manner from the living skin of the cheeks and adjoining area of both sides of the nose. The semi-detached skin strips are scraped and scarified with proper instruments and carefully shaped over two small tubes inserted into the nostrils and secured in position. The free ends of the skin flaps are folded back and stitched in position in order to form the tip of the future nose. The grafted and surrounding area is treated in a manner similar to that described earlier for plastic surgery on the ears. Extreme care and great skill are needed to get a bandage of the exact shape, size and firmness. To prepare such a bandage, cotton moistened with pure sesamum oil is used as a base. After completing the bandaging a pulverized mixture of antimony black, liquorice and *pattaṅga* (*Caesalpinia sappan*) is sprinkled liberally on the bandage to keep it dry.

After the usual course of periodic inspection, medication, and re-bandaging every third day, complete healing is indicated by the formation of dry, healthy and firm skin, adhering properly in position. If the adhesion is partially completed or otherwise unsatisfactory, the parts are again scraped, scarified, shaped with proper instruments, and the procedure of examination, bandaging, etc. repeated, until a satisfactory build-up of the nose is obtained. If the final shape is short or defective, the nose is elongated to its proper size by massaging with the special unguent described in the chapter on ear-lobe grafting. Again, if the final shape is abnormal, further surgery and trimmings are required on the affected nose and adjoining areas until the desired shape is obtained, when the final healing is allowed to take place (*Su.* **16**, 19-24).

Severed lips or hare-lips are also mentioned as amenable to surgical treatment on the above lines, but the processes have not been described.

Treatment of fractures and dislocations

The surgical treatment of *bhagna* and *viśliṣṭa* (fractures and dislocations) consists of various processes which depend upon the location and nature of the case. Generally speaking, they require four successive measures of first-aid, followed by a period of after-treatment and convalescence. The four first-aid measures are: (a) *āñchana* (lifting to the surface)—this process is the first step towards surgical resetting of the limb, a hanging or distorted limb being carefully restored to its original shape; (b) *pīḍana* (digital or other form of pressure), in order to bring the broken and disjointed parts together; (c) *saṃkṣepa* (shortening), which is the actual operation of resetting the fracture or dislocated parts to fit them together; and (d) *bandhana* (bandaging). All these processes are carried out in such a manner that the actual movements of the affected part are limited to a minimum (*Ci.* **3**, 16).

After resetting, the part is covered with a suitable piece of linen soaked in clarified butter. It is then covered with jute tow, the necessary splints placed in position, and a firm, but not too tight, bandage applied. If the bandage is too tight, pain, swelling and possibly suppuration of the part follow; if too loose, the broken or disjointed parts do not adhere, and proper healing is prevented. Such bandages should be replaced at intervals of four to seven days, depending on the weather. Medication, as an aid to healing by local applications as well as by internal use, is also recommended. The diet during the period of healing should be free from salts, acids, alkalis and pungent substances. The patients must also avoid all physical exertion, incontinence, and direct exposure to the sun (*Ci.* **3**, 3, 7-9).

Fractures and dislocations heal easily and quickly in the winter, specially if the patient is young and healthy. In other cases the healing period may last longer, depending upon circumstances; but generally from one month to three months are required (*Ci.* **3**, 13-14). Complete healing is difficult for aged persons, people of intemperate habits, and for patients suffering from derangement of the first humour. Patients of these types suffering from fractures are prone to complications like fever, difficulty in urination, constipation, and buzzing sensation in the ear. The text describes the specific steps necessary for fractures and dislocations of the toes, feet, ankles, legs, knees, thighs, pelvis, ribs, back-bone, shoulders, arms, elbows, wrists, palms, fingers, neck, face and skull. The arms, legs and thighs may suffer various complicated fractures, apart from simple fractures. These are: *nirgata* (compound fractures with the bone protruding

from the skin), *sphuṭita* (fracture of the bone into several fragments), and *piccita* (partial splintering of the bone); all of these require different methods of resetting, dressing, and bandaging with proper splints. These methods have been described in detail. If internal haemorrhage is detected in a case of fracture or dislocation, it should be immediately treated by piercing the part with a surgical needle and draining out the blood; resetting and bandaging should come later. If the neck of a person appear twisted or inclined at an unnatural angle, the physician resets the neck and head by means of a firm grip on the two sides of the nape of the neck, and on the two places where the jaw bones join the neck. Flexible splints are then placed all around the neck, the head and neck firmly bandaged and the patient is kept quickly lying down on his back in a proper position for at least a week (*Ci.* **3**, 20-37).

Special surgical beds, provided with stakes or pegs to which the patient's limbs are firmly secured in order to prevent all movements, are recommended for patients with fracture or dislocation of pelvic area, back-bone, ribs, shoulders and thighs (*Ci.* **3**, 40).

Treatment for wrongly set fractures and dislocations are also described. A faulty setting should be disjointed by the surgeon and then treated like a case of ordinary fracture or dislocation. If in a case of untreated compound fracture, a bone is found sticking out, dried, or forming the focus of an ulcer, it should be removed by a surgical saw before other treatments (*Ci.* **3**, 41-42). The mode of preparing a special embrocation, termed *gandhataila*, is described in detail. It is said to be efficacious in fractures and dislocations which fail to heal normally (*Ci.* **3**, 41-45).

According to Suśruta, a successful treatment of fractured joint is indicated by the painless and smooth character of the part affected and restoration of its original state with perfect freedom for movement (*Ci.* **3**, 48).

Surgical cure of piles and fistulas

Various types of treatment like medicines for internal and external use, cauterization by alkalis or by hot metals, as also surgical operations are recommended for cases of *arśa* (piles and haemorrhoids). The use of an instrument resembling the modern speculum, is described. This instrument is used for proper examination of the affected parts and also for local cauterization. It is made of iron, ivory, horn, or wood, tapering down from the broad upper end, but ending in a bulb at the lower end. This bulb, to be inserted into the piles, has one aperture for viewing, and another for application of drugs, alkaline fluids, etc. The examination as well as the treatment is carried out in direct sun-light, the patient being so placed as to get the maximum light on the affected area.

If the piles are of recent origin, or if there are no visible polyps, then the treatment involves local applications, internal medication, proper diet, and restrictions on activity, etc. More serious cases require cauterization with strong alkalis, or direct heat. If the polyps are raised, red, or filled with pus, and attached by slender roots, they require surgical removal after preliminary measures like fomentation, application of ointments and poultices, draining of pus, etc. (*Ci.* **6**, 1-6, 8-10).

For anal fistulas, a similar speculum, in the shape of a half moon, but without a bulb at the narrow end, is used. Examination is directed to find out the number and locations of openings and abscesses in the affected part, the directions of the sinuses or fissures, the extent of the damaged tissues, and the nature of exudations,

like blood, pus, bodily waste matter, or their mixture from the opening. The surgical operations are made after preliminary measures like washing, fomentation, draining of pus, application of alkaline fluids when indicated, and application of disinfecting and soothing ointments. The damaged tissues are thoroughly explored by surgical probes (*Ci.* **8**, 3-4, 21).

Seven types of anal fistula are described in the text; namely, *śataponaka, uṣṭragrīva, parisrāvī, āgantuka, tridoṣaja, śambukāvarta,* and *śalyaja.*

The operation for the first type involves excising and opening the minor abscesses around the anus without disturbing the principal fistula (sinus) until these are healed up. The connected abscesses are then operated one by one on the external side, while the unconnected ones are not opened at the same time in order to avoid their being joined together to form a wide mouthed ulcer. The other fistulas are similarly treated, one after the other, until a number of single channels are left. This operative treatment naturally extends over quite a length of time; ultimately the main and isolated channels are operated upon, one by one. This prolonged, but safe, method ensures that at no time are the pus, urine and faecal matter allowed to remain blocked in the fistulas treated (*Ci.* **8**, 5). Methods of operation and treatment for the next four types of fistula have also been described with some details (*Ci.* **8**, 6-19). Cauterization with alkali, or fire, or red-hot instrument forms a characteristic feature in these methods *Ci.* **8**, 10).

The text describes the types of excisions needed for different varieties of anal fistula. These various types are: *lāṅgalaka,* or acute angled excision with the arms equal in lengths; *ardha-lāṅgalaka* or acute angled excision with unequal arms; *sarvatobhadraka* or cross-shaped opening; and *gotīrthaka,* a straight excision parallel to the direction of the outer anal orifice. In all operations, bleeding channels on the surface of the operated area are cauterized by heat.

Different methods of medication and post-surgical treatment are also recommended for each type of fistula. Of special interest is a prescription of ointment, used for application over the healing tissues in a fistula operation. This ointment, and *syandana taila* (oil to prevent oozing), are supposed to heal not only the wound, but also to soften the scar and impart a natural consistency and colour to the cicatrix, so that it becomes indistinguishable from the surrounding tissues. This ointment is prepared by slowly simmering a vegetable oil with the decoctions of twelve plants listed in the text (*Ci.* **8**, 1-20).

The minimum period of post-surgical observation and convalescence is one year in the case of fistula operation, compared to a few weeks recommended in other operations. During this period, the patient is kept under close observation by the surgeon and frequently examined; he is forbidden physical exertions, specially riding, and sexual excesses; he is given light and easily digested food and warned against anger or passionate outbursts (*Ci.* **8**, 22).

Suśruta however is quite clear on the point that even after the most expert surgery, medication, after-treatment and rigid precautions, permanent cures are exceptions rather than the rule in such operations. For the last two types of anal fistula, *śambukāvarta* (fistula with conical and serrated opening) and *śalyaja* (fistula of traumatic origin), the patient can at best expect a temporary period of relief after surgery. These are sure to recur again. The other types are difficult, but curable (*Ci.* **8**, 2).

Treatment of abscesses, sinuses, tumours, and inflammatory swellings

In cases of *vidradhi* (external or internal abscesses) and *nāḍīvraṇa* (sinus) the affected part is carefully probed by surgical needles in order to understand the extent of damage. Surgical treatments of these are made by incision and excision respectively. Both are made to open up the wound and drain off all morbid matter. In the case of internal abscesses, the morbid matter is drained by a surgical opening or by any natural orifice of the body. Necessary healing medication and post-surgical measures follow (*Ci.* **16**). In cases of sinus, plug-sticks (*varti*) of different compositions are inserted after surgical operation to help speedy healing of tissues (*Ci.* **17**, 17-20). For suppuration and tumours of the mammary glands, surgical operations should carefully avoid all milk-ducts and the area of the nipples. Poultices and tight bandages are forbidden in this case (*Ci.* **17**, 27-29). Operative treatments for *granthi* (glandular swellings), *galagaṇḍa* (goitre), *arbuda* (fleshy growths and non-suppurating tumour), *vṛddhi* (scrotal tumours with septicaemia), and surgical removal of affected parts of the male organ in advanced cases of certain venereal diseases (*upadaṃśa*) are also described in the text (*Ci.* **18-19**).

Śopha (localised swellings on the skin and in the tissues beneath the skin) may appear at any part of the body and may be uniform, even, round, or elongated in shape. They are amenable to surgical treatment, but the actual surgical process adopted depends upon the nature and type of the swelling and its origin. The text describes the characteristics of six types of *śopha*. Of these, three are caused by the derangement of three individual humours, the fourth by their simultaneous derangement, and the fifth by vitiated blood. The sixth type is caused by injuries. *Śophas* have also been classified as *āma* (immature), *vipacyamāna* (suppurating), and *samyakapāka* (fully suppurated), each with its characteristic appearance and symptoms (*Sū.* **17**, 2-12).

The treatment of immature and unsuppurated *śophas* should be attempted by drugs, medicinal plasters, or blood-letting, and not by surgery. Any surgical operation on immature *śophas* is attended with grave risks. The secondary suppurating stage is reached if the *āmaśopha* is left untreated, and sometimes even after medication, and can be remedied by surgical methods alone. This is also true in the case of the final stage of suppuration.

In all operations for *śopha*, the patients should be first given light nourishing food and alcoholic drinks, the latter to minimise pain. Actual surgical treatment consists of seven successive processes: kneading the affected part (*vimlāpana*), bleeding (*avasecana*), poulticing or hot fomentation (*upanāhana*), opening or incision (*pāṭana*), purification, i.e. cleansing of morbid matter from inside the swelling (*śodhana*), medication to aid healing of the incised wound (*ropaṇa*), and restoration of the proper texture and pigmentation of the scar-tissue (cicatrix) formed on the surface (*vaikṛtāpaha*).

If a suppurated swelling is left untreated, there is grave danger of the pus spreading to the surrounding healthy tissues and forming cavities and sinuses filled with morbid matter, which are extremely difficult to cure (*Sū.* **17**, 13-20).

F. Ophthalmic Surgery

Seventy-six different types of eye diseases are named and described in the text. A list of them, is given in Table VII. This table also gives their symptoms and methods of treatment.

Nine of these seventy-six diseases are peculiar to the connecting tissues (*sandhi*) of the eyes, twenty-one relate to the eyelids, eleven to the white portion of the eyeball and inside areas, four to the iris and dark area, seventeen to the entire region of eyeball and fourteen to the region of the vision (*Utt.* 1-7). Of these, forty are amenable to surgical treatment of various types; the other thirty-six are benefitted temporarily or permanently by purely medicinal measures. Of the category amenable to medicinal treatment, seventeen are declared to be incapable of permanent cure by any means known to medical science. Two types of eye defects, caused by external injuries, are said to belong to this category. In such cases, the only thing that the physician can do for the patient is to prescribe treatments to reduce pain and discomfort, and at best to effect a partial or temporary relief of symptoms (*Utt.* 8, 2). Apart from these incurable types, specific medicinal prescriptions and procedures, including blood-letting, are prescribed in other cases (*Utt.* 9-12).

Surgical methods employed in different conditions are : scarification or scraping (*lekhana*), incision (*bhedana*), excision (*chedana*), and more complicated operations. Pre-operative medicinal applications and drugs are also prescribed in such cases. Surgical scarification or scraping is the most common method employed for the majority of diseases which are amenable to surgery. Scarification, as well as incision, are recommended for some diseases of the eyelids, which are complicated by the presence of boils and pustules. In such operations, the patient, previously treated with a course of emetics, purgatives, and oily emulsions, should be made to lie down in a chamber protected from glare and draughts. The eyes and eyelids are carefully fomented with a piece of clean cloth soaked in warm water. The surgeon next overturns the eyelids and keeps them in this position by digital manipulation. The eyeballs are kept covered with a piece of wet cloth, and discharges if any, are carefully squeezed out and wiped clean. The scraping operation is performed, using a suitable sharp instrument, or a clean leaf with a rough surface. After the bleeding stops, the scraped area is fomented, cleaned, and a medicated paste with styptic properties applied. This paste is washed off with tepid water when the bleeding completely stops, a lubricating salve of pure clarified butter applied, and the usual post-operative precautions against suppuration and formation of ulcers taken. The procedure of fomentation and squeezing out discharges is repeated every third day until complete healing is effected. No bandaging is prescribed except where sizable pustules or eruptions exist. Pustules should first be opened up with scalpels. Smaller pustules, boils, etc. are remedied by plasters and ointments. Scarification should be neither superficial nor too deep; the first being almost useless for the purpose intended, and the second extremely harmful in its consequences (*Utt.* 13-14).

Incision alone is prescribed for certain conditions attended with inflammatory swellings and morbid growths on the surface of the eyes, but the surgeon is recommended to resort to scraping whenever necessary, but only after the morbid discharges have been drained off and thoroughly cleaned. In such cases, preliminary fomentation is followed by the application of powdered inorganic substances, or powdered drugs with astringent properties. This application should be followed by medicinal oils, clarified butter, honey, or other salves. The actual surgical instrument to be employed depends upon the nature of the affection, but various instruments for these purposes are mentioned in the text (*Utt.* 14, 2-6).

Surgical removal, or excision, is recommended for certain pathological growths on the eyelids and on the surface of the eyes. In such operations, the patient, after undergoing a course of diet rich in fats and oils, is made to sit in a relaxed position waiting the operation. The physician sprinkles powdered rock-salt, mild alkalis, etc. into the eyes and rubs them with his own fingers. Hot fomentation is applied immediately afterwards, and the eyelids are held firmly apart to minimize any chance of sudden movement interfering with the operation. The patient is asked to look in such a direction that the affected part becomes visible and accessible. The actual mode of excision, and the instrument used, depend upon the nature of the malady. Soft polyps are secured by means of a hook (*vaḍiśa*), held in position by a needle-shaped instrument, and then removed by small and sharp circular blades (*maṇḍalāgra).* Too deep incision causes pain and haemorrhage, injures the eyes as a whole, and may result in the formation of a sinus; but the depth of the operation should be sufficient to ensure the removal of the polypus permanently, so that it cannot grow again from the remnant. The roots of the polypus should be carefully manipulated by the needle and then snipped off, taking care that there is no injury to the pupil, or the vision. Growths of cysts, pimples, loose networks of hardened veins, or hard opaque growths of flesh and nerves are similarly hooked, isolated and then sliced off. Any remnant of the pathological growth, found remaining after the operation, should be removed gradually by the repeated application of a gritty and abrasive collyrium made by compounding powdered metals, metallic oxides, salts, powdered gems and precious stones, finely pulverized and dried horns and teeth of animals, pulverized shells of hen's eggs, sedative drugs, and powders of garlics, three myrobalans, and of cardamom and *karañja* seeds. A *pārvaṇikā* (copper-coloured cyst on the iris) should be removed by a number of consecutive operations, three-quarters of the growth being removed first by the usual procedure of hooking and slicing, and the process repeated with half of the remaining growth in every successive operation until the physician thinks that a sufficiently deep operation has been effected. This complicated procedure is prescribed to minimize the risk of bleeding, injuries, pain, and possible formation of sinus. In place of excisions, in some cases a scraping may be done, or a flesh-removing application made of rock-salt and honey, may also be carefully rubbed on the operated surface until all the morbid growth is found to be removed. In operations on the inner surface of the eyelids, the surgical wound should be cauterized by means of a hot needle as soon as bleeding stops, and a dilute solution of carbonates (*mṛdukṣāra*) applied for dissolving out and removing the remaining morbid formation. In all successful operations, the eye should regain its natural appearance and functions immediately after surgery. Operations should always be followed by the application of healing salves. The ingredients of such salves depend upon the humoral origin of the disease, the climate and season, the time of the day, and the constitution and strength of the patient. In excision operations, the eyes have to be bandaged properly after completion of surgery and allowed complete rest for appropriate periods. Emetics and purgatives are applied as post-operative measures for elimination of deranged humours. The bandage is removed on the third day, the eye slightly warmed by the application of the warm palms of the surgeon's hands, and the usual and necessary corrective remedies applied. If the patient complains of pain in the operated part, a decoction, prepared by cooking *karañja* seeds, *āmalaka* fruits, and liquorice mixed with honey, is applied. The bandage is removed on the third day

and no further treatment is called for; but the patient is advised to be careful in his diet and conduct for a month (*Utt.* **15**).

An accumulation of deranged *doṣas* at the roots of the eyelashes makes the latter hard, rough and stiffly erect. This condition, known as *pakṣmakopa*, is considered a serious malady by Suśruta. The surgical treatment consists in making an incision of about 1/2 cm. length on the eyelid, the line of operation being parallel to an imaginary line, joining the pupil with the exterior corners of the eye (*apāṅga*). After the wound has been drained and cleansed, the edges of the excision are carefully stitched up with a long piece of horse mane, the free end of which is kept tied with a piece of cloth wound around the forehead. When the edges of the incision are found to have healed together, leaving only a scar, the stitching hair is removed. If this surgical treatment fails to effect a satisfactory cure, the eyelashes should be individually snipped off, and their roots cauterized by heat, or alkali, after fixing the eyelids in position by three small hook-like instruments (*Utt.* **16**).

Diseases affecting the eyesight, involving partial or complete loss of vision, are generally treated by medicinal measures and other non-surgical methods. Surgical operations are however described for various types of *liṅganāśa* (loss of vision, attended with milk-white, red, or other coloured pupils). Suśruta's term *liṅganāśa* apparently includes both cataract of the crystalline lens and opacity of the cornea. It is however pointed out that the scope for surgical cure is limited in such cases, many types of *liṅganāśa* being incurable by any surgical method. Only when the condition is definitely diagnosed to be due to the action of accumulated *kapha*, and when the visible abnormality of the pupils is soft, circular, uniform in density and colour, and free from local pain, should a surgical operation be performed. This operation should be undertaken only in cool and dry weather. The patient is first prepared by a course of sudation, and made to sit in the proper posture with his hands and legs securely tied in order to prevent accidental movement. The eyelids of the patient are next fully and carefully drawn apart, and he is asked to look steadily at the tip of his own nose with both his eyes. The surgeon now carefully inserts a needle-shaped instrument (*yavavaktra*) into the natural minute orifice near the external angle of the eye, taking care not to pierce the white coating of the eyeball, or any blood-vessel. It is imperative that there should be absolutely no bleeding in this, or the subsequent stages of the operation. For operations on the right eye the surgeon uses his left hand and vice versa; but only one eye is operated at a time. A satisfactory insertion of the needle-shaped instrument is marked by absence of pain and any bleeding, there being only a slight sound and the exudation of a small drop of watery liquid at the point of insertion. The eyeball and the conjunctiva are now bathed and irrigated with human milk, and the diseased part with the needle retained inside is fomented with the tender leaves of such plants that have the property of counteracting the morbid effects of the first humour. Immediately after this fomentation, the surgeon isolates and removes the clouded growth visible over the pupil using the sharp cutting edges of another probing instrument. A successful operation is immediately indicated by the restoration of the normal brightness and clarity of the pupil. This operation apparently includes the removal of the lens, but the text is not very clear on this point. The patient is directed to block his nostril on the otherside of the operated eye and then breathe out to remove the phlegm and mucus (*kapha*) which has accumulated over the affected eye. As soon as the patient confirms

that he can see again, the original needle-instrument, inserted into the corner of the eye, is gently withdrawn. The eye is then anointed with clarified butter, the eyelids closed, and a bandage applied over the operated eye. The patient is kept lying in a comfortable bed, in a chamber free from dust, smoke, or glare, and warned against coughing, yawning, sneezing, spitting, eructation, and all sudden movements, until complete healing has been effected. During the period of recovery, the bandage is removed every day, the eyes washed with a decoction of *vāyu*-subduing drugs and carefully examined by the surgeon before the bandage is replaced periodically. The diet during this period should consist only of easily digestible items, moderate in quantity. After healing, beneficial measures for invigorating the eyes (described elsewhere) are recommended for a long-term. The operation for *liṅganāśa* described, here, should be undertaken only by a very experienced surgeon, as any lapse or mistake not only brings further complications, but may also permanently injure the eye beyond possibility of cure (*Utt.* **17**, 34-38).

G. Dental Surgery

Surgical methods are recommended by Suśruta for cure of diseases of the gums, teeth and its roots, except where they are of a minor nature and amenable to medical treatment. Foreign matters or particles, lodged firmly between teeth, should be dislodged by surgical probes, hooks, or dental forceps (*dantaśaṅku*) (*Sū.* **8**, 3; **25**, 7). Surgical excision, using sharp scalpels, is recommended for relieving gum boils (*dantapuppuṭa*) ; sharp-pointed leaves of some trees may also serve the same purpose (*Sū.* **8**, 12; **25**, 3). Inflamed swelling of the gums (*dantaveṣṭa*), as well as gum boils, are also relieved by *srāvya* (draining) methods, using needles or instruments with small, sharp cutting blades (*Sū.* **8**, 3 ; **25**, 7). Violent swelling in the regions of the root of the teeth and loosening of teeth, caused by external injuries, are treated by operation upon the affected parts by *maṇḍalāgra* (ending in sharp, small discs) instruments, draining off the blood and pus, and subsequent application of alkaline fluids (*Ci.* **22**, 15). Fleshy growths on the regions of the gums (*adhimāṃsa*) should be removed by scalpels, etc. and then treated by medicinal applications and gargles (*Ci.* **22**, 17). Tartar deposits on the meeting places of gums and teeth (*dantaśarkarā*) should be scraped by *mannḍalāgra* and *karapatra* instruments (surgical blades) in such a way as not to injure the teeth or the gums ; the exposed areas are then treated with medicated powders and coated with a paste of lac dispersed in honey (*Ci.* **22**, 23).

When the condition of one or more teeth is such that its further retention may cause damage, pain, or even illness, Suśruta recommends extraction in all cases. *Kṛmidanta* (worm-eaten teeth, dental caries) should be cleansed by probes or needles and then treated medically, but should be extracted if the condition so warrants. *Adhikadanta* (additional teeth growing over or under normal teeth or impacted teeth) should also be uprooted and removed. Excessive bleeding in such cases should be stopped by heat-cauterization (*Sū.* **12**, 8 ; *Ci.* **22**, 16, 25).

In the serious condition known as sinus, affecting the teeth and gums (*dantanāḍī*), medical measures on lines parallel to the treatment of sinus in other parts of the body are recommended along with surgical incision of the affected area. If the sinus has affected the lower set of teeth, any loose teeth should be extracted, taking care to remove

completely all broken fragments, as otherwise the sinus may extend to the jaw bone. itself. After incision and extraction, the area is carefully drained off of morbid matter, cleansed, and heat-cauterized. But, even in the case of sinus attended with acute pain, firm and steady teeth should never be uprooted, as such a course may lead not only to excessive and uncontrollable bleeding, but sometimes also to convulsions, facial paralysis, or blindness. This danger is always present, if the affected teeth in a case of sinus belong to the upper jaw. Suśruta recommends that in such cases the upper teeth should not be pulled out even if they be loose (*Ci*. **22,** 18-20).

H. Post-Surgical Process

Sīvana (*suturing*) : Open wounds, specially those over joints involved in movement on locomotion, should be sutured. This applies to surgical as well as accidental wounds. But the suturing is to be performed only after the removal of all foreign matter, pus, and morbid fluids, and subsequent cleansing and purification of the wound, as otherwise pain, suppuration, and other undesirable consequence will follow.

Metals like gold, silver, copper, iron, etc. form the materials for suturing needles. The shape and size of the needle employed depends upon the location of the wound. Over joints and places where the skin is not supported by a sufficiently thick lining of flesh, the needle should be of a circular cross-section (*vṛtta*) and two digits (about $1\frac{1}{2}''$) in length. For fleshy parts, the needle should be triangular (*tryasra*) in section and three digits long. For tender and delicate skin on the abdomen, scrotum, vital parts, etc. the needle should be thin, and bent in the shape of an arc or bow (*dhanurvakra*), and should have a very sharp point.

Threads made from fibres of cotton, hemp, *aśmantaka* (*Bauhinia racemosa*), *mūrvā* (*Sanseviera zeylanica*), *guḍūcī* (*Tinospora cordifolia*), leather, mane of horses, and animal sinews are used for suturing. Thicker or stronger threads, when necessary, are obtained by twining a number of strands together.

While suturing, the edges of the wound should be held in position and the stitches made neither too near nor too far from the edges, in order to guard against broken skin and unnecessary pain. After suturing, the part should be covered with a powdered mixture of *priyaṅgu* (*Aglaia roxburghiana*), *lodhra* (*Symplocos racemosa*), antimony black, and liquorice ; or with ashes of burnt hemp and silk ; or with dried and powdered *śallaki* (*Boswellia serrata*) fruits. The surface, thus dried by sprinkling such powders, should now be bandaged (*Sū*. **25,** 9-12).

Bandhana (bandaging) : Bandages (*bandha*) materially contribute to the healing of ulcers, wounds, and operations. These may be made from various materials like cotton, indigenous silk materials, imported Chinese silk, woollen fabrics, jute fabrics, flax, leather, inner barks of trees having woven strictures, threshed or woven creepers (*latā-vidāla*), or skin of a bottle-gourd (*alābu-śakala*). Other accessory materials are strings, tow or resilient stuffings made from leaves or barks of trees, cream of milk and metals.

Bandages are of various types and shapes, to suit different purposes and different parts of the body. Fourteen different types are mentioned : *kośa,* bandages shaped like sheaths or scabbards for thumbs and toes; *dāma,* bandages shaped like garlands for narrow

and straight limbs ; *svastika* or cross-shaped bandages for joints, some vital parts, eyebrows, ears and the chest ; *anuvellita* or twisted and entwined bandages for the extremities ; *pratolī* or winding bandages for the neck and male organ ; *maṇḍala* or ring bandages for round parts ; *śthagikā* or thimble-shaped bandages for the fingers ; *yamaka* or twin bandages for contiguous wounds ; *khaṭvā* or oblong bandages with narrow extensions in the four corners for the cheeks and temples ; *cīna,* a covering bandage for the eyes ; *vibandha* or nose-shaped bandages for the back and the stomach ; *vitāna* or canopy-shaped bandages for the skull ; *gophaṇā,* bandages shaped like the horn of a cow for the chin, nose, etc. ; and *pañcāṅgī* or five-limbed bandages for the face and head.

Before a bandage is secured in position, a lint (*viśeṣika*) dipped in honey, clarified butter, or medicated paste is inserted into the wound, unless the latter is superficial, or stitched. The proper medicine is now applied over the wound, followed by a soft stuffing preferably made of leaves with necessary medicinal properties, and then a piece of clean, soft and smooth cloth is put in position to serve as a base for the bandage. Bandaging should be tight over the mouth, sidse, head, shoulders and axilla ; neither too tight, nor loose, over ears, arms, legs, face, throat, lips, male organ, back, belly and chest ; and loose over the eyes and joints. The tightness or looseness is of great importance, and any mistake in this respect may cause friction, pain, laceration, hardening of tissues, etc. A properly applied bandage by a skilful surgeon greatly helps in the healing of not only wounds and ulcers, but also of fractures, dislocations, internal rupture, etc. and at the same time assures the patient proper rest, movement of limbs within the desired limits, general comfort, and speedy healing. Bandages also prevent contamination from dust, foreign matter, flies, insects, etc. and protects the affected part from heat, cold, accidental injuries, undesirable and too-rapid drying of the tissues or of plasters applied over the part.

In some conditions, the affected part should be left exposed to the air and carefully guarded. Coagulations of vitiated blood, contused wounds from blows, wounds or ulcers caused by local poisons or poisoning, wounds caused by burns and cauterizations, leprous sores, carbuncles of diabetic patients, swellings caused by rat-bites or mole-bites, suppurations in the rectal region, and degeneration of skin tissues into a putrid or sloughing ulcer (*kledaka*) require no bandages or covering of any sort.

Bandages should be replaced after periodic intervals, the lengths of such intervals depending upon the nature of the wound, the derangement of the humours, and the seasons (*Sū.* **18,** 10-28).

Ālepana (plastering) : Drying pastes or plasters (*ālepa*) are effective for preventing or correcting inflammatory swellings, whatever be their origin, and as post-surgical applications. They can be of the absorbent (*viśoṣī*) or non-absorbent (*aviśoṣī*) types. The semi-liquid plaster should be spread over the affected part in a direction contrary to the growth of hair or hair-follicles on the local skin surface, so as to adhere firmly. The potency and curative effect of their medicinal ingredients gradually permeate through the skin-pores and hair-roots into the body. They should not be applied at night, as in that case the escape of heat from the inflammation would be prevented, leading to aggravation of the swelling. Plasters should be replaced when they become dry and brittle, except in cases where the purpose of application is to localize the pus to a definite point.

Depending on the temperature of the application and the thickness of the layer, plasters are of three types : *pralepa*, *pradeha*, and *kālaka*. The first corrects deranged blood and *pitta* ; the second corrects deranged *vāyu* and *kapha*, and also relieves pain, swelling and inflammation ; the third type has a styptic action, checks formation of pus and morbid matter, softens ulcerated tissues, and draws out putrefying or decomposing tissues from cavities.

When used to counteract and correct inflammations due to deranged *vāyu* plasters should be mixed with one-fourth its weight of clarified butter ; one-sixth its weight of clarified butter for inflammations due to deranged *pitta*, and one-eighth for inflammation due to *kapha*. The thickness of application varies with the nature of the affection, but in no case should exceed that of the newly-flayed skin of a buffalo (*Sū.* **18,** 1-9).

XVI

CONVALESCENCE

Patients recovering from mental disorders, physical illnesses and surgical operations, and particularly the ulcer-patients, should be kept in a spacious, clean, well-proportioned and well-situated room, protected from excessive heat and draughts. The bed should be clean, comfortable and large, and the patient should be laid with his head towards the east. Friends and relations should visit him frequently and speak of interesting topics, specially of the prospects of his speedy recovery. The patient should avoid excessive sleep, sudden movements, shouting, standing, or sitting for prolonged periods. Keeping to bed for unusually long periods, which causes aggravation of the first humour and pain in the affected parts, should also be avoided.

Physical contact or even conversation with women should also be shunned, as it might lead to undesirable consequences and a slow recovery. The patient should be clad in clean and white garments, and should have his hair and nails closely clipped. He should indulge in religious thoughts and remain cheerful. Physicians and brahmins should perform rites, and utter benedictions morning and evening for his recovery. The patient should be fanned and carefully watched while asleep. The diet should avoid newly-harvested rice, green pot-herbs, acids, saline and pungent substances, treacle and sweets, cakes, dried meat and fish, dried vegetables, the flesh of goat, sheep and of amphibious and aquatic creatures, lard, cold water, milk, curds, whey and strong spirituous liquors. Boiled old rice, certain pot-herbs and vegetables (a list of which is given in the text), rock-salt, clarified butter, juice of the pomegranate and *āmalaka* (*Emblic myrobalan*), soup of *mudga* (*Phaseolus radiatus*) pulse, barley water, etc. are prescribed as diet.

Wind, dust, smoke, exposure to heat and cold, over eating, unpleasant sights and noises, late hours, uncomfortable postures, fasting, too much talk, frequent movements, unwholesome foods, and bites of insects—all these hinder recovery to a very marked extent. The patient's room and surroundings should be fumigated by burning incense-sticks every morning and evening (*Sū.* **19**).

XVII

TRAINING AND DUTIES OF PHYSICIANS, SURGEONS AND NURSES

Young persons, who wish to take up the noble profession of healing the sick, should be of good social status, physically robust and healthy, mentally energetic, eager to learn, patient and painstaking, and pleasant in speech and manners. The qualities essential for this calling are self-control, courage, compassion, integrity of character, keen intelligence, retentive memory, insight, acuteness of perception, and purity of mind and body. The first duty of the intending physician is to place himself under the guidance and training of a qualified preceptor. Such a teacher should be superior or equal to his student by birth and caste, should be a master of his own subject, and capable of commanding complete faith and loyalty. When the teacher accepts the pupil, there is a ceremony of initiations in which the student is given a solemn injunction to renounce lust, anger, greed, vanity, self-indulgence, envy, cruelty, pettiness, falsehood, idleness and pretensions (*Sū.* 2, 2-3).

A preceptor is essential not only for imparting a detailed knowledge of the various branches and rections of the science of life, but also for explaining its philosophical basis and the real significance of the diverse information found in the authoratative texts. This knowledge cannot be obtained by unaided study, even if the student be possessed of a profound and superior intellect. Through years of study and close association with the teacher, the keen and receptive student should listen attentively to the teacher's exposition of the subject under discussion and the detailed explanation of each and every *śloka,* or even each word. The subject of study and discussion should not be limited to Āyurveda alone, but should include as much as possible all other branches of science and philosophy, which require to be known for a true understanding of the subject studied. The student should also continually supplement his own knowledge by personal study and discussion (*Sū.* 4, 4-6).

This period of study and training is continued until the preceptor is satisfied with the pupil's attainments. Before commencing actual practice, the intending physician has to obtain a proper licence or permission from the royal court. For this he has to demonstrate beyond all doubt that he has thoroughly mastered the theoretical and practical knowledge imparted to him, has really understood and assimilated his learning, and has been properly trained in making independent observations and practical application (*Sū.* 10, 2.). But it is clearly stated that such attainments are only the minimum equipment of a physician. It is only after adequate experience through years of practice, observations, further study, and discussions that a person can aspire to be worthy of this profession. If he fails to keep up this schedule of constant improvement, he will be regarded not as a true physician, but merely as an imposter (*Sū.* 4, 6).

A physician's duty is to treat all deserving persons to the best of his ability. But habitual sinners, morally degraded persons, and professional killers, even of animals, are not considered persons worthy of medical aid (*Sū.* 2, 5).

When a physician takes up a case, he should whole heartedly apply all his skill, faculties, and knowledge to his work. He should remember that patients trust their physicians implicitly to the extent of placing their lives unhesitatingly under his care. This is true even of patients who have no trust in their own relations, parents and sons. Hence a physician should take as much care of each and every patient as he would of

his own son. By following this principle he benefits his fellow creatures, achieves glory and merit in this life, and creates a place for himself in heaven after death (*Sū.* **25,** 24-25).

Those appointed to the office of court physicians and personal physicians to royal dignitaries have many special duties and responsibilities. Along with the royal priests, they are responsible for the king's welfare, but are subordinate to the priest. A physician fully versed in his science, and fully equipped with medicines and appliances, should reside in the royal palace, or in quarters contiguous to the royal camp, while on a journey. He should anticipate that the enemy would try to poison all available supply of drinking water in near by wells and tanks, as also standing crops and forage, while the king's forces are marching into their territory. It therefore becomes the compelling duty of the royal physician, who performs the duties of the army physician in royal campaigns, to inspect, examine, purify or destroy such waters and foodstuffs. Such a physician is also entrusted with the duty of treating royal personages and high-ranking officers, who have been poisoned or are suffering from wounds or injuries (*Sū.* **34**). In common with other physicians, the royal physicians have to select proper astral conjunctions and auspicious moments for beginning treatments or undertaking surgical operations, to propitiate deities and appease possible supernatural malignant influences, to chant hymns and to perform religious and social rites in accordance with the directions of authoritative texts. The physician should always be available to the patient on a call to insure against actual danger or even apprehension of danger (*Sū.* **5,** 14, 15).

Paricara (assistants) in the service of physicians and surgeons should be trained to help them in treating a patient and to nurse the patient all through his or her illness, remaining constantly at the patient's bedside. An assistant should be physically robust, pleasant in appearance and manners, cool-headed, polite and friendly in conversation, and meticulous in following the directions of the physician or the surgeon (*Sū.* **34,** 12). From directives found in other portions of the text it is clear that nursing attendants should be of the same sex as the patient.

SUŚRUTA SAṂHITĀ
Tables

TABLE I

A. Living Creatures (Edible)

1. *Jāṅgala Prāṇī* (Land Creatures *Sū*. **46,** 53)

Name and reference	Modern equivalent (English/Latin)	Physiological action of the flesh, used as food
(i) *Jaṅghāla-Varga Sū*. 46, 53-57	Long-legged and swift-footed herbivorous quadrupeds	Laxative, diuretic; controls *vāyu* and *pitta*
Cāruṣka	Gazelle (*Gazelle bennetti*)	
Eṇa	Black deer (*Antilope cervicapra*)	Strengthening, appetizing, febrifuge, curative of diseases due to deranged *pitta, kapha* and blood
Hariṇa	White deer	Cooling, appetizing, easily digested; causes constipation and mild uremia; pacifies all deranged humours
Karāla	Musk deer (*Moschus moschiferus*)	
Kṛtamāla	Spotted antelope (*Cervus axis*)	
Kuraṅga	Roe deer (*Capreolus capreolus*)	
Mṛgamātṛkā	Female roe deer	Curative of haemoptysis, typhoid, consumption, dyspnoea, cough, and anorexia
Pṛṣata	Spotted deer (*Cervus axis*)	
Ṛkṣa	Blue deer	
Śarabha	Kashmir deer (*Rusa unicolor*)	
Śvadaṃṣṭra	Mouse deer (*Tragulus meminna*)	
(ii) *Viṣkira-Varga Sū*. 46, 58-63	Birds that pick up their food after scattering with their bills and claws (Gallinaceous birds: it includes the families of *Passeres* and *Scansores*):	Easily digested, cooling, and curative of deranged humours
Cakora	Greek pheasant (*Perdix rufa*)	
Kalaviṅka	House sparrow (*Passer domesticus*)	

Name and reference	Modern equivalent (English/Latin)	Physiological action of the flesh, used as food
Kapiñjala	Gray partridge (*Perdia cinerea*)	Curative of haemoptysis, deranged *kapha*, and decreased *vāyu*
Krakara	A kind of partridge (*Perdix sylvatica*)	Appetizer, spermatopoietic; improves the intellect, and subdues excessive *vāyu* and *kapha*
Kukkuṭa	Wild fowl (*Phasianus gallus*)	Curative of chronic fever, consumption, and rheumatism
Kuruvāhaka	A species of wild fowl	
Kutittiri	A bird resembling partridge	
Lāva	A common quail (*Perdix chinensis*)	Astringent, appetizing, and curative of all deranged humours
Mayūra	Pea-fowl (*Pavo cristatus*)	Beneficial to the skin, voice, and intellect; promotes growth of hair, acuteness of vision and hearing
Naptṛkā	A species of sparrow	
Sāraṅga	The bird *Cucculus melanoleucus*	Beneficial to the skin, vision, hearing, voice, and hair
Śatapatra	Black wood-pecker (*Picus martius*)	
Tittiri	Black partridge (*Francolinus francolinus*)	Curative of deranged humours, hiccup, and dyspnoea; improves intellect, complexion, and appetite; spermatopoietic
Upacakra	A species of *krakara* (*Perdix sylvatica*)	Curative of deranged *vāyu* and *kapha*, and sexual weakness
Vartaka	Indian button quail (*Turnix indica*)	
Vartikā	Bush quail (*Coturnix sylvatica*)	
Vārtīka	Jungle bush quail (*Perdicula asiatica*)	
Vartīra	Rain quail (*Coturnix coromandelicus*)	
Yavalaka	A species of bird	

Name and reference	Modern equivalent (English/Latin)	Physiological action of the flesh, used as food
(iii) *Pratuda-Varga Sū.* 46, 64-69	Birds that pick at, then gobble their food (it includes the families of *Rasores* and *Columbidae*)	Cooling, drying; reduces secretion of *kapha, pitta,* urine, and stool
Annadūṣaka	Possibly yellow-throated sparrow (*Gymnorhis xanthocollis*)	
Bhedāśi	Small parakeet (*Palaornis torquatus*)	Vitiates the humours and disturbs normal excretion of the bodily waste matters
Bhṛṅgarāja	Fork-tailed shrike (*Dicrurus indicus*)	
Dātyuha	Gallinule (*Rallidae*)	
Ḍiṇḍimānaka	Toucan (*Ramphastes piscivorous*)	
Giriśa	Mountain quail (*Coturnix montena*)	
Gokṣeḍaka	*Ardea sibirica*	
Gṛhakuliṅga	House sparrow (*Passer domesticus*)	
Hārīta	Yellowish green pigeon (*Columba hurriyals*)	
Kapota (Kāṇakapota)	Wood pigeon (*Columba palumbas*)	Beneficial in haemoptysis
Khañjarīṭaka (Khañjan)	Wagtail (*Motacilla alba*)	
Koyaṣṭhikā	Green-bill coucal (*Centropus chlorhynchus*)	
Kuliṅga	Tree sparrow (*Passer montanus*)	Increases secretion of *kapha* and semen
Laṭvā	A species of house sparrow (*Passer domesticus indicus*)	
Mātṛnindaka	Common babbler (*Argya caudata*)	Reduces secretion of body fluids and waste-products
Parabhṛta	Indian koel (*Endynamis honorata*)	
Pārāvata	Pigeon (*Columba livia intermedia strickl*)	
Sārikā	Common myna (*Turdus salica*)	
Śatapatraka	Alexandrine or Large parakeet (*Psittacula eupatria*)	
Sugṛhī	Common weaver-bird (*Ploceus philippinus*)	
Śuka	Green parakeet (*Psittacula spengeli*)	
Valgulī	Grey tit (*Parus major*)	Cooling and drying

Name and reference	Modern equivalent (English/Latin)	Physiological action of the flesh, used as food
(iv) *Guhāśaya-Varga Sū.* 46, 70-71	Cave-dwelling animals	Difficult to digest, strengthening; controls *vāyu;* beneficial in eye troubles and rectal diseases
Dvīpi	Panther (*Felis pardus*)	
Mārjāra (indicating here *vanabiḍāla*)	Wild cat (*Felis caracal*)	
Mṛgairvāruka	A jackal-like animal feeding on deer	
Ṛkṣa	Bear (*Melursus ursinus*)	
Siṃha	Lion (*Felis leo*)	
Śṛgāla	Jackal (*Canis aureus*)	
Vṛka	Wolf (*Canis lupus*)	
Vyāghra	Tiger (*Felis tigris*)	
Tarakṣu	Hyena (*Hyaena striata*)	
(v) *Prasaha-Varga Sū.* 46, 72-73	Birds that grab and tear off their food (*Raptores*)	As above; particularly beneficial in wasting diseases
Bhāsa	White-headed vulture (*Trigonoceps occipitalis*)	
Cāṣa	Blue jay (*Coracias benghalensis*)	
Cilli	Kite (*Milvus govinda*)	
Gṛdhra	Vulture (*Vulture monachus*)	
Kāka	Crow (*Corvus splendens*)	
Kaṅka	Heron (*Ardea cenerea*)	
Kurara	Osprey (*Pandion heliaectus*)	
Śaśaghātī	Golden eagle (*Aquiler chrysaetors*)	
Śyena	Hawk (*Aceipiter gentilis*)	
Ulūka	Indian horned owl (*Bubo bengalensis*)	

Name and reference	Modern equivalent (English/Latin)	Physiological action of the flesh, used as food
(vi). *Parṇamṛga-Varga* *Sū.* 46, 74-75	Tree-dwelling animals	Difficult to digest; improves vision; diuretic, laxative, curative of wasting diseases, cough, and asthma.
Avakuśa	Cow-tailed monkey	
Madgumūṣika	Arboreal rodents (*Mus rattus*)	
Pūtighāsa	Civet cat (belongs to family *Viverridae*)	
Vānara	Indian monkey (*Semnopithecus entelus*)	
Vṛkṣaśāyikā	Squirrel (*Sciurus caniceps*)	
(vii) *Vileśaya-Varga* *Sū.* 46, 76-84	Burrowing animals	Heating, generating *pitta* and *kapha;* subdues *vāta;* improves evacuation and urination; beneficial in cough, dyspnoea, and cachexia
Ajagara	Indian python (*Python molurus*)	Beneficial in piles
Godhā	Iguana lizard (*Iguanidae*)	Improves general health; pacifies *vāyu* and *pitta*
Kadalī	Marmot (*Marmota*)	
Lomaśakarṇa	A big cat-like animal having the appearance of a tiger	
Lopāka	Fox (*Vulpes bengalensis*)	
Mahābabhru	A kind of large ichneumon	
Mṛgapriyaka	Boa (*Constrictor constrictor*)	Beneficial in diseases from deranged *vāyu*
Mūṣika	Mouse or rat (*Mus musculus*)	
Nakula	Mongoose (*Herpestes mungo*)	Easily digestible, cooling, and antitoxic; subdues *pitta*
Śallaka	Porcupine (*Hystrix leucura*)	
Sarpa	Snakes (*Ophidia*)	Beneficial in piles and deranged *vāyu;* appetizing, invigorating eyesight, antitoxic; improves intellect
Śaśa	Rabbit (*Oryctolagus cuniculus*)	
Śvāvit	Hedgehog (*Erinaceus europaeus*)	
Vṛṣadaṃśa	Possibly indicating a mouse or rat	

(viii) *Grāmya-Varga Sū.* 46, 84-88	Domesticated animals	Strengthening and appetizing; subdues *vāta* and produces *pitta* and *kapha*
Aśva	Horse (*Equus caballus*)	Strengthening but difficult to digest
Aśvatara	Mule	As above
Basta	Goat (*Capra hircus*)	Curative of nasal catarrh; subdues *pitta* and *kapha*
Go	Cattle (*Bos taurus*)	Cooling; curative of cough, catarrh, chronic fever, dyspnoea, and morbid hunger
Khara	Ass (*Asinus equidae*)	Strengthening but difficult to digest
Medapucchaka	Fat-tailed sheep (*Ovis steatopyaga*)	Strengthening and aphrodisiac
Urabhra	Sheep (*Ovis*)	Strengthening but difficult to digest
Uṣṭra	Camel (*Camelus dromedarius*)	As above

Living Creature (Edible) — (*Contd.*)

2. *Ānūpa Prāṇī* (Aquatic or Amphibious Creatures) *Sū.* **46**, 94

Name and reference	Modern equivalent (English/Latin)	Physiological action of the flesh, used as food
(i) *Kūlacara-Varga Sū.* 46, 94-104	Creatures frequenting shores of rivers and bodies of water:	Diuretic, cooling, strengthening; increases secretion of *kapha* and semen; controls deranged *vāyu* and *pitta*
Araṇya gavaya	Wild cow (*Bibes gaurus*)	
Camara	Yak (*Bos grunniens*)	Curative of cough and of deranged *vāyu* and *pitta*
Gaja	Elephant (*Elaphus indicus*)	Drying, heating, curative of deranged *vāyu* and *kapha;* vitiates *pitta*
Gavaya	Gayal ox (*Bos frontalis*)	Demulcent and aphrodisiac; curative of cough
Gokarṇa	Cow-eared deer (*Antilope picta*)	Easily digested, curative of haemoptysis; causing *kapha*
Kālapucchaka	Black-tailed deer (*Odocoileus*)	
Khaḍgi	Rhinoceros (*Rhinoceros unicornis*)	Drying; decreases urination; beneficial for longevity and in deranged *vāyu* and *kapha*
Mahiṣa	Buffalo (*Bubalus bubalis*)	Heating; increases strength and virility; beneficial in building tissue and promoting lactation
Nyaṅku	Hog deer (*Axis porcinus*)	
Ondra	Otter (*Lutra vulgaris*)	
Rohita	Red deer (*Cervus elaphus*)	
Ruru	Barking deer or muntjac (*Muntiacus muntjak*)	Difficult to digest; increases secretion of semen; pacifies deranged *vāyu* and *pitta*
Sṛmara	Indian wild boar (*Sus cristatus*)	Diuretic; increases *kapha* and semen; cooling and strengthening
Varāha	Boar (*Sus scrofa*)	Diuretic and curative of deranged *vāyu;* increases strength and virility

Name and reference	Modern equivalent (English/Latin)	Physiological action of the flesh, used as food
(ii) *Plava-Varga Sū.* 46, 105-107	Aquatic birds that represent the classes of birds like the *Natatores* and the *Grallatores*:	Laxative, diuretic, cooling; controls deranged *vāyu;* increases virility
Ambukukkuṭikā	Moorhen (*Gallinula chloropus*)	
Baka	Heron (*Ardea cinerea*)	
Balākā	Demoiselle crane (*Anthropoides virgo*)	
Cakravāka	Ruddy sheldrake (*Anas casarca*)	
Haṃsa	Common or mute swan (*Cygnus olor*)	Beneficial for building body tissues; increases virility and strength; improves voice and complexion; curative in nervous diseases
Jīvañjīvaka	Chukar (*Alectoris graeca chukar*)	
Kādamba	Grey lag goose (*Anser anser*)	
Kācākṣa	Indian reef heron (*Demiegretta asha*)	
Kāraṇḍava	Coot (*Fulica atra*)	
Konālaka	A species of aquatic quail	
Krauñca	Pond heron (*Ardeola grayii*)	
Kurara	Osprey (*Pandion heliaectus*)	
Madgu	Small cormorant (*Phalacrocorax niger*)	
Mallikākṣa	Bar-headed goose (*Anser indicus*)	
Megharāva	A kind of water-fowl	
Nandīmukha	Flamingo (*Phoenicopterus roseus*)	
Plava	Pelican (*Pelicanus onocrotalus*)	
Puṇḍarīka	A white-eyed duck	
Puṣkaraśāyikā	Common crane (*Grus grus*)	
Śarārīmukha	Darter or snake-bird (*Anhinga melanogaster*)	
Sārasa	Sarus crane (*Antigone antigone*)	
Śuklākṣa	White-eyed pochard (*Nyroca rufa*)	
Śvetacaraṇa	Not identified *	
Utkośa	Fishing eagle (*Icthyophaga*)	

* A kind of white-footed goose-like bird having a pouch in the throat (*vide* Ḍallaṇācārya's commentary)

Name and reference	Modern equivalent (English/Latin)	Physiological action of the flesh, used as food
(iii) *Kośastha-Varga Sū*. 46, 108-110	Univalve and vivalve molluscs	Cooling, demulcent, stool and *kapha* forming; subdues deranged *vāyu* and *pitta*
Bhalluka	Cowrie (*Cypraea arabica*)	
Śambūka	Common snail (*Helix aspersa*)	
Śaṅkha	Conch (*Tsjanka rapa*)	
Śaṅkhanakha	A species of small bivalve molluscs	
Śukti	Pearl-mussel (*Margaritana mergaritifer*)	
(iv) *Pādina-Varga Sū*. 46, 109-111	Aquatic creatures having pedal or long dorsal appendages:	Cooling, demulcent, stool and *kapha* forming; subdues *vāyu* and *pitta*
Karkaṭaka	Common crab (white species) (*Carcinus maenus*)	Laxative, diuretic; helps adhesion of fractured bones; beneficial in deranged *vāyu* and *pitta*
Kṛṣṇakarkaṭaka	Black crab	Heating, strengthening; subdues deranged *vāyu*
Kumbhīra	True gavial (*Gavialis gangeticum*)	
Kūrma	Oval or oblong shaped turtles or tortoise (*Chelonia*)	
Śiśumāra	Dolphin (*Delphinus gangetica*)	
(v) *Nādeyamatsya-Varga Sū*. 46, 112-118	Freshwater riverine fish	Heating, difficult to digest, constipating and leading to haemoptysis: destroys deranged *vāyu;* virilific
Gomatsya	A huge sheat-fish (*Siluridae*)	
Kṛṣṇamatsya	Not identified *	
Murala	Possibly it refers to Indian puffer (*Tetrador patoca*)	Constructive, tonic, virilific; increases secretion of *kapha;* induces lactation

* A type of scale-fish, reddish, red-eyed and having a large number of fish bones (*vide* Ḍallaṇācārya's commentary)

Name and reference	Modern equivalent (English/Latin)	Physiological action of the flesh, used as food
Pāṭalā	Tan coloured cat-fishes (possibly refers to two species: *Clupisoma gāura* and *Eutropiichthys vacha*)	
Pāṭhīna	Boal (*Wallago attu*)	Increases secretion of *kapha;* virilific, somnolent, vitiating *vāyu* and *pitta;* causes dermal affections
Rājīva	Mullets (*Mugil corsula*)	
Rohita	Red carp (*Labeo rohita*)	Destroys deranged *vāyu*
Sahasradaṃṣṭrā	Bachha cat-fish (*Euthopiichthys vacha*)	
Vāguñjara	Possibly refers to Bombay-duck (*Harpodon nehereus*)	
Varmī	(i) A kind of cat-fish (*Rita rita*) (ii) *Mastacemelus armatus*	
(vi) *Sāmudramatsya-Varga Sū.* 46, 113	Marine fish	Difficult to digest, heating, virilific, strengthening; helps formation of stool; controls deranged *vāyu*
Candraka	Chanda, a kind of silver fish	
Gargaraka	*Pimelodus gagora*	
Kuliśa	Hatchet-fish	
Mahāmīna	Large marine fish	
Makara	Crocodile (*Crocodilus porosus*)	
Nandivāralaka	Possibly refers to bull-headed or horn shark (*Heterodontus*)	
Nirālaka	Not identified	
Pākamatsya	Sucking-fish (*Catostomidae*)	
Rājīva	Mullets (*Mugil corsual*)	
Timi	Whale (*Cetacea*)	
Timiṅgila	Whale shark (*Rhineodor typus*)	

TABLE I (*Contd.*)

B. Living Creatures (Non-edible)

1. *Jaṅgama-Viṣa-kalpa* (Venomus animals *Ka.* 3-8)

Name and reference	Description and identification, if any (English/Latin)	Physiological action of poison
Godhā, Ka. 3, 8; 8, 8	Monitor lizard (*Iguanidae*) — poison lies in their teeth and nails	
Gṛhagodhikā, Ka. 3, 4	Small house lizard — poison lies in their teeth and nails	
Kīṭa-kalpa, Ka. 3, 8 (Separately listed)	Insects and creatures of lower orders — poison lies in teeth, bristles, and bodily waste matters	Causes fever, pain in the limbs, horripilation, burning sensation in the body and seat of bite, loss of consciousness, difficult breathing, eruptions of pustules, swelling, appearance of nodular glands, circular patches on the skin, ring-worm, erysipelas
Mārjāra, Ka. 3, 4	Cat (*Felis domesticus*) — poison lies in teeth and nails	
Matsya, Ka. 3, 7-11 Four poisonous varieties : *rājīva, raktatarāji, sakulī* and *varakī*	Poisonous fish — poison lies in the oral exudations and bile	
Mūṣika-kalpa, Ka. 3, 6; 7 (Eighteen varieties named)	Mice and rats (*Mus musculus* and *Mus rattus*) — poison lies in the semen	Scratching, biting, or contact with body secretions cause eruptions, wide-spread inflammation, tumours, intense pain, fever, difficult breathing, horripilation, fainting fits and other symtoms according to the class of the rodent
Ṛkṣa, Ka. 7, 7	Bear (*Melusus labiatus*)	Bite of a rabid animal causes copious flow of dark blood, loss of sensory perceptions, animal-like behaviour, and hydrophobia

Name and reference	Description and identification, if any (English/Latin)	Physiological action of poison
Sarpa-kalpa, *Ka*. 3, 3, 4	Snake	Poisons, secreted by such creatures, cause unconsciousness and aggravation of all the three humours
(a) *Bhaumasarpa*, *Ka*. 3, 4 (Eighty varieties distributed in five types)	Terrestrial snakes — poison lies in their fangs	
Darvīkarasarpa, *Ka*. 4, 6, 12, 22 (Twenty-six varieties named)	Hooded snakes with characteristic marking on their hoods (cobra)	Causes blackening of skin, nails, eyes, teeth, and bodily excretions; heaviness of head, shivering pain, rattling sound in throat, difficult breathing, excessive salivation, foaming in the mouth, and choking
Maṇḍalīsarpa, *Ka*. 4, 6, 13, 23 (Twenty-two varieties named)	Large snake marked with multi-coloured ringline or circular marks (viper)	Causes yellowing of the skin and eyes, intense burning sensation and thirst, delirium, fever, haemorrhage from bodily orifices, swelling, suppuration and sloughing of flesh, and intense pain
Rājimatsarpa, *Ka*. 4, 6, 14, 24 (Ten varieties named)	Glossy skinned snakes with multi-coloured vertical or lateral stripes (coral snake)	Causes extreme pallor of skin, numbness, horripilation, swelling, flow of thick phlegm from mouth, vomiting, swelling and rattling sound in throat, difficult breathing, delirium and pain
Nirviṣasarpa, *Ka*. 4, 15, 25 (Twelve varieties named including *ajagara*, i.e. python)	Non-venomous snakes	No poisoning is caused except a slight vitiation of the local blood
Vaikarañjasarpa, *Ka*. 4, 16, 17 (Three varieties and seven sub-varieties named)	Hybrid snakes of various colours and markings, according to their contributory breeds	The poisoning symptoms are in accordance with both the parental strains of the particular hybrid

Name and reference	Description and identification, if any (English/Latin)	Physiological action of poison
(b) *Divyasarpa*, *Ka.* 3, 4; 4, 2-3 (Innumerable varieties, two named)	Fabled celestial serpent	All types of contact as well as sight and breath causes instantaneous death
Śṛgāla, *Ka.* 7, 7	Jackal (*Canis aureus*) — poison lies in their saliva	Same as in *ṛkṣa*
Śva, *Ka.* 3, 4; 7, 7	Dog (*Canis familiaris*) — poison lies in their teeth, nails, and saliva	,,
Tarakṣu, *Ka.* 7, 7	Hyena (*Hajaena striatus*) — poison lies in their teeth and saliva	,,
Vānara, *Ka.* 3, 4	Monkey (*Semnopithecus*) — poison lies in teeth, nails, and saliva	,,
Vyāghra, *Ka.* 7, 7	Tiger (*Felis tigris*) — poison lies in their teeth and saliva	

Living Creatures (Non-edible) (*Contd.*)

2. *Kīṭa-Kalpa*

(Venomous insects and creatures of lower order *Ka.* 8)

Name and reference; variations, if any	Description and identification, if any (English/Latin)	Physiological action of poison
(i) Classification of *kīṭas* according to three humoral diseases, caused by their biting:		
(a) *Vāyavya*, *Ka.* 3, 7-10; 8, 3, 6	Seats of poison in the body of some of the members of this group:	Common physiological actions of poison from *kīṭas* in general (see *kīṭa*, p. 120) Poison aggravates and causes derangement of the bodily humour *vāyu* and produces the specific diseases resulting therefrom
Eighteen species: ***abhirājī, agnināma, āvartaka, cicciṭiṅga, citraśīrṣaka, kumbhīnasa, mayūrikā paruṣa, raktarāji, śarāvakūrda, sārikāmukha, śatabāhu, śatakulīraka, śṛṅgī, tuṇḍikerī, ucciṭiṅga, urabhra, vadala***	(a) *citraśīrṣaka, śarāvakūrda, sārikāmukha* — mouth with antennea, and bodily waste matters (b) *raktarāji* — bile (c) *śṛṅgī, ucciṭiṅga* — bristles, head, and bodily excreta The remaining members have poisons in their fangs	
(b) *Agniprakṛti*, *Ka.* 3, 5, 8-10; 8, 4, 6	Seats of poison in the body of the members of the group:	As in *vāyavya* Poison tends to aggravate the bodily humour *pitta* and produces the diseases resulting from it
Twenty-four species: ***arimedaka, bhramara, bindula, brāhmaṇikā, dundubhika, gardabhī, kaṇabhaka, kauṇḍilyaka, klīta, kṛmisarārī, kṛṣṇa-tuṇḍa, kumbhī, makara, padmakīṭa,***	(a) *arimedaka* — mouth with antennea and bodily waste matters (b) *bhramara* (bees) — bristles and head	

Name and reference; variations, if any	Description and identification, if any (English/Latin)	Physiological action of poison
pākamatsya, pañcālaka, patravṛścika, piccița, śatapādaka, utkleśaka, vāhyaki, varațī, varcaḥkīța, vināsikā	(c) *kauṇḍilyaka, varcaḥkīța, piccița* — feces and urine (d) *pākamatsya* — teeth and nails (e) *śatapadī* (centipede, *Aptera ametabola*) — bristles and head (f) *varațī* (a species of wasp) — bones, bristles, head, and saliva The remainings have poison in their mouth with antennea	
(c) *Ambuprakṛti, Ka.* 3, 4-5, 7; 8, 5-6		As in *vāyavya* Poison aggravates and deranges the *kapha* and produces the specific diseases which owe their origin to the deranged condition of that *doṣa*
Thirteen species: *kāṣāyavāsika, kīțagardabhaka, kițibha, kokila, kṛṣṇagodhā, pañcakṣṛṇa, pañcaśukla, pracālaka, saireyaka, sūcīmukha, troțaka, valabha, viśvambhara*	Seats of poison in the body of the members of this group: (a) *kāṣāyavāsika* — bodily excretions (b) *godhā, pracālaka* — teeth and nails (c) *viśvambhara* — saliva The rest have poison in their mouth with antennea	

Name and reference; variations, if any	Description and identification, if any (English/Latin)	Physiological action of poison
(d) *Sannipāta, Ka.* 3, 4; 8, 6	Seats of poison in the body of the members of this group:	As in *vāyavya*
		Bites cause symptoms resembling snake-bite. Derange and aggravate three *doṣas* of the body and produce the diseases resulting from them
Twelve species: *agnikīṭa, avalguli, koṣṭhāgārī, kṛmikara, maṇḍalapucchaka, śambūka, sarṣapikā, tālaka, tuṅganābha, tuṅginasa, vāhaka, vicilaka*	(a) *śambūka* (cone shells, *Conus*) — teeth and nails The remainings, excluding *vāhaka* and *sarṣapikā*, have poison in their mouth with antennea	
(ii) Classification of *kīṭas* into ten different species; members of the same species though producing different physiological action by their bite:		
(a) *Galagolī, Ka.* 8, 12	Probably refers to snake-like anguid lizard	A bite by any of these insects excepting *sarṣapikā* is attended with a burning sensation and slimy exudation from the swelling at the seat of bite
Six species: *kṛṣṇa, raktamaṇḍala, raktarāji, sarṣapikā, sarvaśvetā, śvetā*		A bite by a *sarṣapikā* causes dysentery and pain at the heart; it is incurable
(b) *Gaudheraka, Ka.* 3, 4; 8, 11, 16	Hybrid iguana lizard* — poison lies in their teeth and nails	Bite resembles snake-bites, marked by all its characteristic swelling, burning sensation and pain in the body, and the appearance of dreadful nodular glands of varied colours and shapes
Five species: *bahuvarṇa, gaudheraka, nirupama, piṅgābhāsa, pratisūrya*		A bite by a *gaudheraka* is incurable
(c) *Jalaukasa, Sū.* 13, 8; *Ka.* 4, 8 (Six venomous and six non-venomous varieties named)	Leeches (*Hirudinea*) — poison lies in their mouth with antennea	Bite of any poisonous species produces swelling, burning sensation, fever, delirium, and total unconsciousness

* Vide the commentary of Dallaṇācārya

Name and reference; variations, if any	Description and identification, if any (English/Latin)	Physiological action of poison
(d) ***Kaṇabha, Ka.* 8, 10** **Four species :** ***aparājita, hastikakṣa, kariṇī, trikaṇṭa***	A kind of fly with stings — poison lies in their mouth with antennea	Bite causes extreme pain, gives rise to swelling, aching in the limbs, heaviness of the body, and black spots at the seat of bite
(e) ***Makṣikā, Ka.* 8, 17** **Six species :** ***kāntārikā, kāṣāyī, kṛṣṇā, madhūlikā, piṅgalikā, sthālikā***	Stinging flies, possibly hornet	A bite by any of these causes swelling and a burning sensation A bite by one *sthālikā* or *kāṣāyī* species, in addition to the above symptoms, gives rise to eruption of the pustules with supervening symptoms A bite by a *kāṣāyī* and *sthālikā* is incurable.
(f) ***Maṇḍuka, Ka.* 8, 14** **Eight species :** ***bhṛkuṭi, harita, koṭika, kṛṣṇa, kuhaka, rakta, sāra, yavavarṇābha***	Frog (*Rana*) — poison lies in teeth and nails	A bite by any of these is accompanied by an itching sensation at the seat of bite and a flow of yellow-coloured foam from the mouth A bite by *bhṛkuṭī* or *koṭika* species, in addition to the above symptoms, causes burning sensation, vomiting, and a severe attack of epileptic fits A bite by a *bhṛkuṭi* is incurable
(g) ***Maśaka, Ka.* 8, 18** **Five species :** ***hastimaśaka, kṛṣṇa, parimaṇḍala, parvatīya, sāmudra***	Mosquito (*Holometabola guťicidae*)	A mosquito-bite causes severe itching and swelling of the affected part A *parvatīya* mosquito-bite resembles those of totally venomous insects. A pustule is formed at the seat of bite. It is attended with burning sensation and suppuration therein
(h) ***Pipīlikā, Ka.* 8, 16** **Five species :** ***brāhmaṇikā, citravarṇā, kapilikā, saṃvāhikā, sthūlaśīrṣa***	Ant (*Formicidae-Hymoneptera*)	A bite by any of these is attended with inflammatory swelling and a burning sensation resembling those produced by contact with fire

Name and reference; variations, if any	Description and identification, if any (English/Latin)	Physiological action of poison
(i) *Śatapadī*, *Ka*. 8, 3 Eight species : *agniprabhā, citrā, kapilikā, kṛṣṇā, paruṣā, pītikā; raktā, śvetā*	Centipede (*Aptera ametabola*) — poison lies in their bristles and head	Bites cause swelling, pain, and burning sensation in the heart. A bite by a *śvetā* or an *agniprabhā* causes also epileptic fits, intolerable burning sensation, and eruption of white pustules
		A bite by a *śvetā* and an *agniprabhā* is incurable
(j) *Viśvambharā*, *Ka*. 3 7; 8, 15 Three species : *ahiṇḍukā, kaṇḍumakā, śūkavṛntā*	A kind of scorpion or similar insect — poison secretes from saliva	A bite by a *viśvambharā* species is marked by catarrhal fever and an eruption of white pimples in the shape of mustard seeds round about the seat of bite
		A bite by a *ahiṇḍukā* gives rise to piercing pain, a burning sensation, itching and swelling in the affected locality, and delirium
		A bite by a *kaṇḍumakā* is followed by a yelloweness of the complexion, vomiting, dysentery, and fever
		A bite by a *śūkavṛntā* causes itching and urticaria
(iii) *Kīṭas* not included in the two classifi cations already made:		
Cipiṭa, *Ka*. 3, 5	Venomous insect — poison lies in bodily excretions	

Name and reference; variations, if any	Description and identification, if any (English/Latin)	Physiological action of poison
Lūtā, Ka. 3, 6; 8, 43-51 Sixteen species : Poisonous actions of eight of these are curable and that of others eight are incurable	Spider (*Araneae*)—secretes seven kinds of poison through different parts of the body, including excreta, viz. (a) saliva, (b) claws and nails, (c) urine, (d) fangs, (e) ovum, (f) fecal matter, and (g) semen	(a) Poison secreted with saliva causes urticaria attended with itching and slight pain (b) Poison from a scratch of claws gives rise to swelling, itching, horripilation (c) Urine in contact with the body gives rise to blackness of skin in the middle of the point of contact, and redness at its edges. The affected part is also cracked (d) In fang-poison the seat of bite is marked by fixed circular patches and becomes indurated and discoloured (e), (f), (g) The part of the body coming in contact with bodily excretions is marked by eruptions of pustules yellowish in colour
(a) The first group (with curable poisonous action) includes : *ālāviṣā, kapilā, kasanā, mūtraviṣā, pītikā, raktā, śvetā, trimaṇḍalā*		A bite by any of them causes aching pain in the head, pain and itching about the seat of bite, and disorders of body peculiar to the aggravated *vāyu* and *kapha*
(b) The second group (with incurable poisonous action) consists of: *agnivarṇā, eṇīpadī, jālinī, kākāṇḍā, kṛṣṇavarṇā, lājavarṇā, malāguṇāṣṭamī, sauvarṇikā*		Bites marked by bleeding, fever, a burning sensation, dysentery, and disorders of the three deranged humours of the body
Piccitaka, Ka. 3, 5	Venomous insect — poison lies in bodily excretions	
Sāmudravṛścika, Ka. 3, 7	Sea scorpion, possibly scorpion-fish — poison lies in their saliva	
Śatadāruka, Ka. 3, 8	Venomous insect — poison lies in their fangs and bodily excretions	

Name and reference; variations, if any	Description and identification, if any (English/Latin)	Physiological action of poison
Śūka, Ka. 3, 10	A kind of caterpillar — poison lies in their bristles and head	
Valabhikā, Ka. 3, 10	Venomous insect — poison lies in their bristles	
Vṛścika, Ka. 8, 37-41	Scorpion — lies in their saliva	
Three species : (a) *Mandaviṣa* (Twelve varieties named)	Black, dark-brown, blue-black, red and green, white or multi-coloured varieties of mild poisoning action germinate from cow-dung and other rotten substances	Bites cause pain, shivering, numbness, swelling, perspiration, and fever
(b) *Madhyaviṣa* (Three varieties named)	Three-segmented scorpions of bright red, deep yellow or tawny colour with medium poisoning action germinate from decomposed wood and excreta and putrid eggs of snake	Bites cause above symptoms, also swelling of the tongue, difficulty in breathing, and fainting
(c) *Mahāviṣa* (Fifteen varieties named)	Multi-segmented scorpions of white, pale or coloured varieties of extreme poisoning action, germinate from decomposed carcases of a snake or from any poisoned animal	Bites cause symptoms similar to snake-bites, also vertigo, discharge of blackened blood from nose and mouth, and even death

TABLE II

Medicinal Substances of Animal Origin and their Uses

Name and reference; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
Ajakṣīra, *Sū.* 45, 47; *Ci.* 2, 24; 5, 6; *Utt.* 41, 21	Goat's milk	(a) As diet (b) Ingredient of mixture for internal use (c) Ingredient of wash-liquid for external use	(a) For cough, haemoptysis, phthisis, and other consumptive diseases (b) For cleansing vitiated blood and in deranged *vāyu* (c) For washing the region of neck after operation
Ajamūtra, *Ci.* 1, 86	Goat's urine	Ingredient of paste	For restoring natural colour to a cicatrix
Ajaśakṛt, *Sū.* 12, 3; *Utt.* 44, 19	Goat's droppings	(a) Accessory to surgical cauterization (b) Powdered after drying and compounded with honey and cow's urine	(a) Cauterization of diseased part related to skin (b) Used as linctus for jaundice
Arghyamadhu, *Sū.* 45, 119, 125	Honey obtained from *ārghā*, a kind of yellow bee that extract honey from *Brassica latifolia*	Article of diet	Tonic; strengthens eye and vision; subdues *pitta* and *kapha* without generating *vāyu*
Asthibhasma, *Ci.* 1, 89	Bone-ash	Ingredient of paste	For inducing growth of hair on a bald spot
Aśvakaṭaka, *Sū.* 7, 11	Horse mane	As binding material or ligature	In surgery
Auddālakamadhu, *Sū.* 45, 119, 126	Honey from small brown bees that live in ant-hills	Article of diet	Appetizing, antitoxic; improves the voice and cures cutaneous affections
Āvika, *Sū.* 18, 10	Sheep's wool	As padding material	In bandaging
Bhrāmaramadhu, *Sū.* 45, 119, 124	Honey from large black or bumble bees	Article of diet	Difficult to digest, aphrodisiac, and laxative
Carma, *Sū.* 7, 11; 18, 10	Animal hides	As surgical aid	For surgical bandages
Carma-dvaipa, *Ci.* 9, 13	Elephant hide	Burnt and powdered to form a plaster	For a type of malignant skin disease called *śvitra*

Name and reference; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
Chātramadhu, *Sū*. 45, 119, 124	Honey collected from umbralla-shaped hives of a class of yellow bees of the forest of Himacala region	Article of diet	Difficult to digest, cooling; curative of intestinal parasites, haemoptysis, urinary diseases, and skin troubles
Cīnapaṭṭa, *Sū*. 18, 10	Chinese silk	Bandaging material	For surgical bandages
Dadhi, *Sū*. 45, 58	Sour-milk	Article of diet	Heating, vitalizing; cures fever, dysentery, weakness, uraemia, and other diseases
Dālamadhu, *Sū*. 45, 119, 127	Honey collected directly from the leaves of honey-secreting plants	Article of diet	Soothing; cures nausea, and urinary diseases
Gajamūtra, *Ci*. 9, 16	Elephant's urine	For preparing alkaline decoction	For malignant sores
Ghṛta, *Sū*. 5, 3, 13; 45, 8 Syn.: *sarpi*	Clarified butter (ghee)	(a) As local application (b) As part of diet	(a) Dressing after surgical operations (b) Increases slimy secretion of body; lubricating, vitalizing, rejuvenating; efficacious in insanity, epilepsy, colic, fever, distension of abdomen; improves memory, intelligence, eye-sight, albumen; eliminates poison from body
Godanta, *Sū*. 12, 3	Cow's teeth	Accessory to surgical cauterization	Cauterization of diseased part relating to skin
Gomūtra, *Sū*. 15, 35; 44, 35; *Ci*. 1, 87; 14, 13	Cow's urine	(a) Ingredient of a mixture (b) Ingredient of a mixture (c) Ingredient of a plaster (d) Ingredient of a liquid medicine (e) Ingredient of a fermented wine, or taken alone	(a) Antidote for obesity (b) Purgative (c) For eliminating vermin from ulcer (d) For controlling *vāyu* disorders (e) Specific for abdominal dropsy and many other uses
Gopitta, *Ci*. 9, 18	Cow's bile	As vehicle of an ointment	For persistent skin diseases

Name and reference; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
Gṛdhrapurīṣa, *Sū*. 37, 9	Vulture's droppings	Ingredient of a plaster	For bursting of non-boils
Hastidantamasī, *Ci*. 1, 88	Ivory black	Ingredient of a paste	For inducing growth of hair on a bald spot, or in alopecia
Kaṅkapurīṣa, *Sū*. 37, 9	Pigeon's droppings	Ingredient of a plaster	For bursting of non-boils
Kapotapurīṣa, *Sū*. 37, 9	Heron's droppings	As above	As above
Kauśeya, *Sū*. 18, 10	Silk fibres	As bandaging material	In surgical bandages
Kiṇva, *Sū*. 37, 8, 28	Ferments and enzymes	(a) Ingredient of plaster (b) Ingredient of a mixture	(a) In suppurative swellings (b) For destroying fleshy super-growths
Kṛṣṇasarpamasī, *Ci*. 9, 14	Black ashes from burning a cobra	For making a plaster	For treatment of a malignant skin disease known as *śvitra*
Kṣaudramadhu, *Sū*. 12, 3; 45, 119, 122	Honey from reddish-brown insects or small bees	(a) For external application (b) Article of diet	(a) Accessory for surgical cauterization (b) Cool, light, stomachic, and healing agent
Kṣīrapāka, *Su*. 11, 9	Quick lime from mollusca-shells	For preparing caustic alkalis	
Kukkuṭāṇḍakapāla, *Sū*. 37, 28; *Ci*. 1, 87; *Utt*. 18, 46	Hen's egg-shell	(a) Ingredient of a mixture (b) Ingredient of paste (c) Ingredient of eye-salve	(a) For destroying fleshy super growths in ulcers (b) For restoring natural colour to a cicatrix (c) For eye diseases and improving vision
Kukkuṭapurīṣa, *Ci*. 9, 15	Dung of a specially fed cock	Compounded into plaster	For malignant skin diseases
Lākṣā, *Sū*. 14, 29; *Gi*. 9, 18; *Utt*. 18, 48	Lac or shellac	(a) Powdered for external use (b) Powdered and compounded in ointment (c) As above	(a) In excessive bleeding (b) In malignant skin sores (c) For eye diseases
Madhu, *Sū*. 5, 3, 13	Honey	As local application and ingredient of mixture; also taken alone	For healing of surgical wounds for reducing obesity, for use as tonic, and for a wide variey of conditions, used alone
Madhūcchiṣṭa, *Sū*. 12, 19; *Ci*. 8, 17; 20, 10 Syn.: *siktha*	Bee's wax	(a) Ingredient of plaster (b) Ingredient of medicinal oil	(a) For burns, and for treatment of carbuncles of diabetic origin (b) For curing anal fistulas

Name and reference; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
Majjā, *Sū*. 16, 17; *Utt*. 9, 2	Marrow of birds or animals	(a) Ingredient of unguent	(a) For promoting growth of healthy tissues
		(b) Ingredient of eye-drops	(b) In ophthalmia
Mākṣikamadhu, *Sū*. 45, 119, 122; *Ci*. 12, 11	Honey from large bees of the brown variety	(a) Article of diet	(a) For cooling, drying, softening, and strengthening; improves complexion
		(b) For preparing tonic wine	(b) For obesity, indigestion, swelling, internal tumours, chronic skin diseases, jaundice, urinary diseases, dropsy, and incontinence of urine
Māṃsa, *Sū*. 46, 53; *Ci*. 18, 22; *Utt*. 9, 12	Flesh (of land animals, birds and aquatic creatures)	(a) As cooked food or extracts	(a) Physiological actions of different kinds of flesh food have been listed in Table I.
		(b) Poulticing materials	(b) For maturing non-suppurating boils
		(c) Ingredient of eye-drops	(c) For ophthalmia
Muktā, *Sū*. 46, 366; *Ci*. 1, 87; *Utt*. 15, 11; 44, 18 Syn.: *samudramaṇḍukamaṇi*	Pearls	(a) Taken internally in prescriptions as powder	(a) For cooling, antitoxic, general prophylactic and cleansing action; for improving eyesight
		(b) In powders for external use	(b) For removing pathological growths on the eyes
		(c) Digested in cow's urine and used in linctus	(c) For jaundice
		(d) Powder as an ingredient of a paste	(d) For restoring natural colour to cicatrix
Pauttikamadhu, *Sū*. 45, 119, 120	Honey from large yellow bees	Article of diet	As intoxicating and acid-producing agent; aggravates *vāyu*, blood, and *pitta*
Payas, *Sū*. 5, 3; 16, 18; 45, 46 Syn.: *kṣīra*	Milk	(a) As local application	(a) As dressing after surgery
		(b) Ingredient of unguent	(b) For promoting growth of healthy flesh

Name and reference; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
		(c) As tonic potion	(c) As a nutritive and a remedy in wasting diseases, cough, enlarged glands, fainting fits, heart diseases, dysentery, haemoptysis, and female diseases
Pravāla, *Sū*. 46, 366; *Utt*. 15, 11; 18 12; 44, 18 Syn.: *vidruma*	Coral	(a) As powder in external application	(a) For removing growths on eye-balls
		(b) Ingredient of eye-salve	(b) For improving vision
		(c) As fine powder in preparations for internal use	(c) For cooling, antitoxic, prophylactic and cleansing actions; for improving eyesight
		(d) As linctus made of powder digested in cow's urine	(d) In jaundice
Samudraphena, *Sū*. 14, 29; *Ci*. 9, 11; *Utt*. 15, 11; 18, 12	Cuttle-fish bones	(a) As powder for external application	(a) For excessive bleeding
		(b) As local application	(b) For persistent skin diseases
		(c) Ingredient of eye-salve	(c) For removing growths on eye-balls
Śaṅkha, *Sū*. 14, 29; *Ci*. 1, 92; *Utt*. 15, 11	Conch-shell	(a) As powder in mixture	(a) In excessive haemorrhage; as a depilatory
		(b) Powder as an ingredient of eye-salve	(b) For removing fleshy growths on eye-balls
Śaṅkhanābhi, *Sū*. 11, 9	A kind of univalve-shell	As a powder after burning for internal use	As an alkali in acidity
Santāna, *Sū*. 18, 10	Cream of milk	As dressing	In surgical bandages
Śapha, *Ci*. 1, 82, 89 Syn.: *khura*	Hooves of animals	(a) As decoction of the powder prepared after burning	(a) For darkening a cicatrix formed after surgery
		(b) As a paste of the powder obtained by burning	(b) For inducing growth of hair on a bald spot
Śikhipitta, *Ci*. 9, 18	Peacock's bile	Component of ointment	In malignant skin affection
Snāyu, *Sū*. 25, 11	Animal sinews and tendons	As thread for surgical suturing	In surgery

TABLE II: MEDICINAL SUBSTANCES OF ANIMAL ORIGIN

Name and reference; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
Śṛṅga, Sū. 5, 3; *Ci.* 1, 89; 35, 7	Horns	(a) As instruments (b) As ashes incorporated into a paste (c) As material for enema-tubes and catheters	(a) In surgical operations (b) For inducing growth of hair on a bald spot
Śukti, Sū. 14, 29	Oyster-shells	As powder in mixtures	In excessive haemorrhage
Takra, Sū. 45, 77; *Ci.* 9, 12	Whey	(a) As a drink (b) Ingredient of paste	(a) As an appetizer; as curative of toxic symptoms, oedema, dysentery diarrhoea, ulcers, piles, enlarged spleen, fever, colic, and obesity (b) In ring-worm
Tarusāra, Ci. 35, 7	Wood	As a material for enema-tubes and pans	
Vāla, Sū. 25, 11	Human or animal hair	As thread for suturing	In surgery
Vasā, Sū. 5, 3; 16, 17; 42, 15	Animal fat (lard)	(a) As a local application (b) Ingredient of unguent (c) Article of diet	(a) In dressing after surgery (b) For promoting growth of healthy flesh (c) Beneficial in derangement of *vāyu*
Veṇikā, Sū. 7, 11	Braided human or animal hair	As a binding and ligaturing material	In surgery

TABLE III

Medicinal Plants, plant products and their Uses

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Abhiṣuka, *Sū*. 46, 192-93	Pistachio nut *Pistacia vera Linn.*	Fruits taken internally	Demulcent, heat-producing, and tonic
Agnimantha, *Sū*. 11, 4, 7; 37, 2; 38, 4, 5, 33; 39, 6; *Ci*. 17, 13	*Premna integrifolia* Linn.	(a) As 'alkaline ashes for external application	(a) For various cutaneous diseases, worms, poisoning, and seven facial diseases
		(b) Ingredient of paste	(b) Subdues swellings
		(c) Taken internally	(c) In migraine and internal abscesses; reduces obesity In urinary diseases and calculi
		(d) Roots taken internally	(d) Appetizer; subdues deranged *vāyu* and *pitta*
		(e) Ingredient of iron-compound	(e) In uncurable virulent skin-disease, obesity, swelling, and consumption; prolongs life-time
Aguru, *Sū*. 5, 14; 37, 23; 38, 12; 39, 8; *Ci*. 2, 50	Aloe tree *Aquilaria agallocha* Roxb.	(a) As fumigating ingredient	(a) For healing of boil after operation
		(b) Ingredient of medicinal oil	(b) For quick healing of wounds
		(c) Taken internally or applied externally	(c) In obesity, urethral discharges, jaundice, and chronic skin diseases
		(d) As above	(d) In boils, skin diseases, and blood poisoning
		(e) Ingredient of paste	(e) For healing up of wounds in testicles after operation

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Ahiṃsrā*, *Sū*. 37, 2, 5; *Ci*. 17, 19; *Utt*. 51, 16** Syn.: ***hiṃsrā*, *kālā	*Capparis sepiaria* Linn.	(a) Ingredient of medicinal paste	(a) For swelling
		(b) Ingredient of medicated *ghṛta*	(b) In asthma and cough
		(c) Ingredient of medicated oil	(c) For purification and healing of boils; in erysipelas
***Ajā*, *Ci*. 30, 4, 9**	Possibly *Saussurea gossipifolia* Don.		
Ajagandhā*, *Sū*. 37, 5, 12; *Ci*. 5, 39; 17, 7; 18, 37; *Utt*. 35, 2** Syn.: ***ajā	*Peucedenum grande* Clarke.	(a) Ingredient of medicinal paste	(a) Subdues lymphatic swelling
		(b) Decoction used for lints and plugs	(b) Cleansing and antiseptic
		(c) Ingredient of a pill	(c) In diseases of the deranged *vāyu*, cough, asthma, ascites, heart disease, internal tumour (gulma). tympanites, aching pain at the sides and in the abdomen and bladder, anorexia, retention of stool, strangunary, splenetic disease, and piles
		(d) Used in the preparation of medicinal plaster	(d) In lymphatic erysipelas
		(e) Ingredient of a compound for internal and external uses	(e) In goitre
		(f) Ingredient of a medicated oil for external use	(f) In child disease caused from evil spirits

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Ajājī, *Ci.* 5, 39; *Utt.* 42, 16-17, 19, 53; 47, 30	A variety of *Cuminum cyminum* Linn.	(a) Ingredient of potion	(a) In diseases due to excessive use of alcoholic drinks
		(b) Used in the preparation of a pill	(b) As in *ajagandhā* (c)
		(c) Powder taken in different preparations	(c) In colic pain caused from deranged *vāyu*
		(d) Ingredient of different preparations of medicated *ghṛtas*	(d) In deranged *vāyu*, internal tumour, weak digestive fire, colic pain, dysentery, piles, asthma, insanity, consumption, fever, epilepsy, loss of appetite, and splenetic disease
Ajarkarṇa, *Sū.* 38, 6; *Ci.* 9, 12; 11, 8; 19, 17; 20, 8	White dammer *Vateria indica* Linn.	(a) Taken internally or used externally	(a) In obesity, urethral discharges, jaundice, and chronic skin diseases.
		(b) Ingredient of ointment	(b) In ringworm
		(c) Ingredient of medicated liquor	(c) In anomalies of urinary secretion
		(d) Ingredient of medicinal paste for external applications	(d) In lymphatic venereal disease
			In suppurating and immature boils in *vidārikā*
Ajalomī, *Ci.* 30, 4, 10; *Utt.* 60, 29	A type of fern plant	Ingredient of pill and paste	In mental disorders caused from superhuman influences

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Ajamodā, *Sū*. 37, 9; 38, 11; *Ci*. 5, 39; *Utt*. 24, 24 Syn.: *aganika*	Indian celer *Apium graveolens* L	(a) As a paste with dropings of pigeons, storks, etc.	(a) For promoting suppuration and bursting of non-suppurating boils and carbuncles
		(b) Used internally	(b) Appetizer and absorbent of intestinal mucus and unassimilative lymph-chyle; curative of catarrh, abdominal glands, colic, and gastralgia
		(c) Decoction used as gargle	(c) For catarrh due to deranged humour
		(d) As in *ajagandhā* (c)	(d) As in *ajagandhā* (c)
		(e) Ingredient of a paste for internal use	(e) In suppurating and immature boils
Ajaruhā, *Ka*. 1, 34	Possibly a fern *Nephrodium Sp.*	External use in the form of an amulet	Antitoxic
Ajaśṛṅgī, *Sū*. 37, 5, 12; 38, 4, 7; *Ci*. 20, 8 Syn.: *ajaśṛṅga*, *jiṅginī*, *nāga-vṛttika*	Indian ash-tree *Odina wodier* Roxb.	(a) Ingredient of medicinal paste	(a) Subdues lymphatic swellings
		(b) Decoction used for lints and plugs	(b) Cleansing and antiseptic
		(c) Taken internally	(c) In migraine and internal abscesses; reduces obesity
			In haemoptysis, general oedema, urethral discharges, and seminal and female disorders, Antitoxic, astringent, and styptic
		(d) Ingredient of medicated oil	(d) For healing up of wound after surgical operation of *vidārikā*

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
***Akṣoḍa, Sū.* 45, 106; 46, 192**	Walnut tree *Aleurites moluccana* Willd.	(a) As fruits	(a) As tonic and constructive; for all deranged humours
		(b) Oil of the seeds taken internally	(b) Potent and digestive; pacifies the deranged *vāyu* and *pitta;* increases slimy secretion of organs, etc.
***Alābu, Sū.* 46, 221; *Śā.* 10, 18; *Ci.* 23, 15**	The bottle-gourd plant *Lageneria vulgaris* Linn.	(a) As cooked vegetable	(a) Diuretic and stool-forming; purgative
		(b) The dried leaves and tendrils burnt for local fumigation	(b) In retention of the placenta after delivery
		(c) Ingredient of medicinal paste	(c) In swelling
		(d) Powdered seeds combined with others burnt for local fumigation	(d) In retention of stool
Āmalakī, Sū.* 38, 27, 29; 39, 3; 46, 145; *Utt.* 12, 9; 17, 30** Syn.: ***āmalaka, dhātrī	Emblic myrobalan *Phyllanthus emblica* Linn.	(a) Taken internally	(a) Indigestion, loss of breast milk, uterine and vaginal disorders Subdues deranged humours; cures skin diseases, urinary diseases, and irregular fever Aphrodisiac, general tonic, and febrifuge
		(b) Bark taken internally	(b) As purgative

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(c) Taken as an article of diet	(c) For the improvement of eyesight in corneal opacity
		(d) Ingredient of eye-salve	(d) For eye diseases due to vitiated blood
Ambaṣṭhā, *Sū.* 37, 5; 38, 22; *Ci.* 18, 35 Syn.: *ekaiṣikā*, *pāṭhā*	Velvet-leaf tree *Cissampelos pariera* Linn.	(a) Taken internally	(a) In persistent dysentery and non-healing ulcers; promotes adhesion of fractured bones
		(b) Ingredient of medicinal paste	(b) In swelling due to deranged *kapha*, and in goitre
Amlavetasa, *Ci.* 5, 30	Sorrel tree *Rumex vesicarius* Linn.	Ingredient of potion	In hysterical convulsions and epileptic fits
Amlikā, *Sū.* 46, 162	A variety of tamarind tree *Tamarindus indicus* Linn.	Taken as fruits	Stomachic, astringent, appetizer; helps movement of bowels
Āmra, *Sū.* 38, 23; 46, 152; *Ci.* 17, 19	Mango tree *Mangifera indica* Linn.	(a) Taken as fruits (unripe)	(a) In obesity, haemoptysis, and vaginal discharges
		(b) Taken as fruits (ripe)	(b) Tonic; forms fresh blood and tissues; increases formation of semen
		(c) A decoction of the powdered stones used for lints	(c) For healing sinuses
Āmrātaka, *Sū.* 46, 153	Hog-plum tree *Spondias mangifera* Willd.	Taken as fruits	Spermatopoietic; increases *kapha*

Name, references, synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Aṅkoṭa, *Sū*. 37, 11; 38, 4-5; *Ci*. 4, 26; 17, 20 Syn.: *moraṭa, nirdahanī*	*Alangium lamarckii* Thw. Syn.: *A. hexapetalum*	(a) Decoction used as wash	(a) Cleansing and antiseptic
		(b) Ingredient of medicated salt	(b) In rheumatism, abdominal gland, dyspepsia, piles, cough, and intestinal parasites
		(c) Powdered seeds and fruits used for external application	(c) In sinus formation
		(d) Flowers taken internally	(d) In migraine, internal abscesses, urinary diseases and calculi; reduces obesity
Apāmārga, *Sū*. 11, 7; 16, 17; 38, 8; 39, 5; *Ci*. 4, 26 Syn.: *mayūraka*	Rough chaff tree *Achyranthes aspera* Linn.	(a) As alkaline ash	(a) For promoting growth of normal tissues after surgery
		(b) Thick aqueous extract as ingredient of massage cream	(b) As a remedy for ulcer
		(c) Taken internally	(c) For aggravated *kapha*, effect of poisoning, and skin diseases
		(d) Ingredient of medicated salt	(d) In rheumatism, internal tumour, dyspepsia, piles, cough, and intestinal parasites
Āragbadha, *Sū*. 11, 7; 37, 15, 27; 38, 3, 14, 31; *Ci*. 9, 12; *Utt*. 61, 20 Syn.: *ārevata, rājavṛkṣa, sampāka, vyādhighāta*	Indian laburnum *Cassia fistula* Linn.	(a) As alkaline ash	(a) For promoting growth of normal tissues after surgery
		(b) Ingredient of medicinal oily ointment; decoction for external use	(b) For cleansing and sterilizing deep-seated wounds, for growth of flesh in the wound

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(c) Taken internally or used externally	(c) Antiseptic, antitoxic, febrifuge; in chronic skin diseases and urinary troubles
		(d) Ingredient of medicinal ointment	(d) In malignant ulcers, leprosy and other virulent skin diseases
		(e) Ingredient of medicated *ghṛta* for internal use	(e) In epilepsy, fever, consumption, asthma, and insanity
Ariṣṭa, ***Sū***. **39, 2; 46, 273, 274; *Utt*. 39, 123**	Soap-nut tree *Sapindus trifoliatus* Linn.	(a) Roots taken internally	(a) As emetic
		(b) As potherb	(b) In haemoptysis, fever, chronic skin diseases, urinary diseases, cough, and hiccup
		(c) Ingredient of medicated *ghṛta* for internal use	(c) In erysipelas, fever, asthma, internal tumour, cutaneous skin diseases, chlorosis, dullnes of appetite
Arjaka, ***Sū***. **38, 9**	Shrubby basil (variety) *Ocimum gratissimum* Linn.	Taken internally	In dyspesia, catarrh, cough, and asthma
Arjuna, ***Sū***. **14, 29; 38, 4, 6; *Ci*. 7, 3, 25, 18**	Arjuna tree *Terminalia arjuna* Bedd.	(a) Powdered bark for external application	(a) Styptic
Syn.: ***ārtagala, kakubha***		(b) Taken internally or used externally	(b) In obesity, haemoptysis, and vaginal discharges
			In urethral discharges, jaundice, chronic skin diseases, migraine, and internal abscesses

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(c) The bark as ingredient of hair tonic	(c) For the cure of greying of hair
		(d) Decoction boiled with clarified butter for internal use	(d) In urinary calculi
Arka, *Sū*. 11, 7; 14, 28; 16, 17; 38, 8; 39, 13; 45, 101; 46, 300; *Ci*. 9, 4 Syn.: *alarka*, *rūpikā*	**Madar tree** *Calotropis gigantea* Roxb.	(a) As alkaline ash	(a) Aid to surgical bleeding
		(b) Ingredient of plaster	(b) For healing and forming healthy normal tissue after surgical operation
		(c) Thick aqueous decoction as ingredient of massage cream	(c) For cleansing and sterilizing the interior of an ulcer on the earlobe
		(d) Taken internally (flowers)	(d) Antitoxic, vermifuge, curative of skin diseases; subdues *pitta* and *kapha*
		(e) The milky resin taken internally	(e) As purgative
		(f) Oil of the seeds taken internally	(f) Beneficial in the three deranged humours; in urinary diseases and head diseases
		(g) Flowers cooked with oil or clarified butter for internal use	(g) For malignant skin diseases
Arkapuṣpī, *Sū*. 46. 273	*Gynandrodropsis pentaphylla* D.C.	Cooked as potherb	In haemoptysis, fever, chronic skin diseases, asthma, cough, and urinary diseases

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Asana, Sū. 38, 6; 46, 300; *Ci.* 25, 18-19 Syn.: *bīja, bījaka*	*Terminalia tomentosa* Bedd. Syn.: *Pentaptera tomentosa* Roxb.	(a) Decoction of flower, and pith used in the preparation of oil (b) Taken internally (flowers) or used externally	(a) In greying of hair (b) In obesity, urethral discharges, jaundice, and chronic skin diseases; subdues *pitta* and *kapha*
Asitamuṣkaka, Sū. 11, 6	*Ghaṇṭāpārula* tree *Schrebera swietnoides* Roxb. (Black variety)	As alkaline ash	In cauterization
Aśmabhedaka, Sū. 38, 5	*Kalanchoe laciniata* DC.	Taken internally	In urinary diseases and calculi
Aśmantaka, Sū. 25, 11; 46, 166, 175; *Śā.* 10, 53; *Ka.* 5, 31	(i) *Bauhinia malabarica* Roxb. (ii) *Ficus cordifolia* Roxb.	(a) Used as strings (b) Taken internally (c) Decoction of the leaves used as wash (d) Used as drug	(a) For suturing after surgical operation (b) Astringent, cooling, and palatable; subdues deranged *vāyu* and *kapha*; in miscarriage and abortion (c) In ear lobes affected with pustules (d) In poisoning
Aśoka, Sū. 38, 7	Asoka tree *Saraca indica* Linn.	Taken internally	Antitoxic, antiseptic, astringent, and styptic; in female disorders
Aśvabalā, Sū. 46, 266; *Ci.* 1, 19	A variety of *Trigonella foenum-graecum* Linn. (Large-leaved)	(a) As cooked potherb (b) Leaves used externally	(a) Diuretic and laxative; diminishes excessive urination or formation of intestinal gases (b) In ulcers
Aśvagandhā, Sū. 16, 17; 37, 5, 20, 27; 39, 2	Winter cherry *Withania somnifera* Dunal.	(a) Thick aqueous extract as ingredient of massage cream (b) Ingredient of plug-sticks	(a) For promoting growth of normal tissues after surgery (b) Promotes growth of flesh in massaged parts

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(c) Ingredient of ointment (d) Roots taken internally (e) Ingredient of medicated paste	(c) For quick healing of wounds (d) As emetic (e) For swelling
Aśvakarṇa, *Sū*. 11, 7; 37, 24; 38, 6	A plant resembling *Vatica robusta* Gaertn.	(a) Wood with roots and leaves used as an alkaline ash (b) Bark as an ingredient of medicated powder (c) Taken internally	(a) In cauterization (b) For healing up of wound (c) In leprosy, deranged fat and *kapha*, morbid discharges from the urethra, and chlorosis or jaundice
Aśvamāraka, *Sū*. 11, 7; 37, 9, 11; 38, 31; *Ci*. 18, 30 Syn: *hayamāraka*, *karavīra*	Sweet-scented oleander *Nerium odorum* Soland.	(a) As poultice with droppings of pigeons, storks, etc. (b) Wood with roots and leaves used as alkaline ash (c) Ingredient of ointment (d) As decoction for disinfecting wash (e) Taken internally or applied as ointment	(a) Induces bursting of non-suppurating boils and swellings (b) In cauterization (c) Quick healing of wounds (d) Cleansing and antiseptic (e) In leprosy, malignant ulcer, and other virulent skin diseases
Aśvattha, *Sū*. 38, 23; *Utt*. 21, 6	Sacred fig tree *Ficus religiosa* Linn.	(a) Taken internally (b) Ingredient of medicated oil (c) Bark as an ingredient of medicated plaster	(a) In obesity, haemoptysis, and vaginal discharges (b) For earache (c) In fracture of bones
Atasī, *Sū*. 45, 101; *Ci*. 18, 35	Linseed tree *Linum usitatissimum* Linn.	(a) Seeds as ingredient of medicinal plaster (b) Oil of the seeds taken internally	(a) In goitre (b) Laxative; in diseases due to deranged humours, in urinary diseases, intestinal parasites, and in head diseases

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Atibalā, *Sū*. 16, 17	Indian sida *Sida rhombofolia* Linn.	Thick aqueous decoction as ingredient of massage cream	For promoting growth of normal healthy tissues after operation
Atichatrā, *Ci*. 30, 4	A variety of borage plant *Trichodesma indicum* R. Br.	Taken as extract in milk	General and potent remedy for many diseases
Ativiṣā, *Sū*. 38, 11, 26	*Aconitum heterophyllum* Wall.	Taken internally	For deranged *kapha* and *vāta*, for uterine and vaginal disorder, for purification of breast milk and for cure of catarrh, internal tumour, colic, and gastralgia
Ātmagupta, *Sū*. 37, 22; 38, 2 Syn.: *ṛṣabhī*	Cowhage plant *Mucuna pruriens* DC.	(a) Ingredient of ointment (b) Taken internally	(a) For quick healing of wounds (b) In respiratory trouble, wasting diseases, and internal tumour
Badarī, *Sū*. 38, 23; 46, 142, 146	Jujube tree *Zizyphus jujuba* Lamk. (Big variety)	Fruits taken internally	In obesity, haemoptysis, menstrual and other vaginal discharges; subdues deranged *vāta* and *pitta*
Bakula, *Sū*. 46, 166; *Ci*. 11, 8	*Mimusops elengi* Linn.	(a) Flowers taken in internal preparations (b) Ingredient of medicated liquor	(a) Astringent; subdues deranged *pitta* and *kapha*; gives firmness to the teeth (b) In diseases of the urinary tract
Balā, *Sū*. 15, 33; 16, 17; 37, 11, 18; *Ci*. 5, 18; *Utt*. 17, 10	Heart-leaf sida *Sida cordifolia* Linn.	(a) Ingredient of medicinal plaster (b) Ingredient of massage cream (c) As a disinfecting wash (d) Taken internally (e) Ingredient of eye-salve	(a) Aid to surgical bleeding; poulticing in rheumatism (b) For growth of normal healthy tissues after surgery (c) Cleansing and antiseptic (d) In poisoning, fever, obesity, and urinary diseases (e) In night blindness
Bālaka, *Sū*. 38, 12; *Ci*. 17, 4; *Utt*. 62, 12-13 Syn.: *barhiṣṭha*, *hrīvera*	Fragrant mallow plant *Pavonia odorata* Wild.	(a) Taken internally	(a) In skin eruptions and blood poisoning

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(b) Ingredient of medicinal *ghṛta* for internal use	(b) In asthma, phthisis; insanity, impotency, sterility, and emaciation
		(c) Ingredient of paste	(c) In erysipelas
Bandhujīva, *Sū*. 39, 2	*Pentapates phoenicea* Linn.	Taken internally	For emesis
Bāṣpika, *Ci*. 4, 26	A variety of *Cuminum cyminum* Linn.	Ingredient of medicated salt	In rheumatism, internal tumour, dyspepsia, piles, cough, and intestinal parasites
Bhallātaka, *Sū*. 38, 28, 26; 46, 203, 259-260 Syn.: *aruṣkara*	Marking-nut tree *Semecarpus anacardium* Linn.	(a) Taken internally	(a) In haemoptysis, excessive menstruation and vaginal discharges In indigestion and loss of breast-milk
		(b) Leaves taken internally	(b) Produces dryness in cases of excessive fluid secretion; cooling; cures haemoptysis; subdues deranged *kapha*
		(c) Fruits taken as an article of diet	(c) In constipation, intestinal parasites, and fever
Bhallūka, *Sū*. 38, 5; *Ci*. 7, 4	*Oroxylum indicum* Vent.	(a) Taken internally	(a) In urinary diseases and calculi
		(b) Ingredient of medicated salt	(b) Urinary calculi
Bhārgī, *Sū*. 38, 8, 11	*Clerodendron siphonanthus* Roxb.	Taken internally or applied externally	For parasitic worms, skin diseases, dyspepsia. catarrh, cough, asthma, and colic pain
			Antitoxic, antiseptic, styptic, astringent, and beneficial in internal tumour

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Bhavya, Sū. 46, 142, 157	*Dillenia indica* Linn. Syn.: *D. speciosa* and *elliptica* Thumb.	Fruits taken as an article of diet	Astringent; subdues derange *pitta* and *kapha*
Bhṛṅgarāja, Ci. 25, 18	Trailing eclipta plant *Wedelia calandulacea* Less.	The expressed juice as ingredient of hair oil for regular use	(a) Restores natural colour to gray hair
Bhūmikadamba, Ci. 2, 65-66; 17, 7; *Utt.* 44, 17 Syn.: *kadambapuṣpī, mahīkadamba*	*Blumnia lacera* DC.	(a) Ingredient of oil for local application	(a) In malignant ulcers
		(b) Ingredient of thick ointment	(b) For eryśipelas and other extensive skin eruptions
		(c) Ingredient of medicated *ghṛta* for internal use	(c) In jaundice
Bhūrja, Sū. 38, 6	Indian birch tree *Betula bhojapatra* Wall.	Taken internally or applied externally	In obesity, urethral discharges, jaundice, and chronic skin diseases
Bilva, Sū. 38, 4, 33; 46, 264	*Bel* tree *Aegle marmelos* Linn.	(a) Unripe fruits taken internally	(a) In migraine and internal abscesses; reduces obesity
		(b) Ripe fruits taken internally	(b) Appetizer, laxative; subdues deranged *vāyu* and *pitta*
		(c) Leaves taken internally	(c) As above; heat-producing
Brahmasuvarcalā, Sū. 46, 273; *Ci.* 30. 5-6.	A variety of the *brāhmī* plant *Herpestes monniera* Gaertn.	(a) As cooked potherb	(a) Beneficial in haemoptysis, urinary disease, fever, dyspnoea, cough, and anorexia
		(b) Extract in milk taken internally in conjunction with a special regimen of diet; as cooked potherb	(b) A potent and general remedy for many diseases

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Brāhmī, *Sū*. 37, 11; 46, 273; *Ci*. 9, 11, 27; 28, 5-6	Thyme leaved gratiole. *Herpestes monniera* Gaertn.	(a) Used as a decoction	(a) For washing ulcer
Syn.: *kapotavaṅka, somavalka, suvarcalā*		(b) Taken internally	(b) In urinary diseases and calculi
		(c) As potherb	(c) In fevers, chronic skin diseases, urinary diseases, haemoptysis, hiccup, cough, and dysponea
		(d) Ingredient of thick plaster for external application	(d) In ulcers and swellings
		(e) Juice with milk as a part of daily diet	(e) For inellectual vigour and longevity; in all types of serious diseases
		(f) As ointment	(f) For growth of flesh in ulcer
Cakramarda, *Ci*. 9, 12	Foetid cassia *Cassia tora* Linn.	Seeds pasted for making ointment	In ringworm
Campaka, *Sū*. 46, 308; *Ka*. 6, 6	*Michelia champaka* Linn.	(a) Flowers taken internally	(a) Cures haemoptysis and excessive bile secretion; subdues deranged *kapha*
		(b) Used in a medicinal prescription for internal application	(b) Anti-venomous
Caṇḍā, *Sū*. 38, 12	*Angelica glauca* Edgw. (Black variety)	Taken internally	In skin eruptions and blood poisoning

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Candana, *Sū*. 12, 17; 37, 3; 38, 16, 19, 22; *Ci*. 2, 50	Sandalwood tree *Santalum album* Linn.	(a) Paste of the wood as ingredient of ointment	(a) In major burns
		(b) Bark as ingredient of ointment	(b) In inflammations and traumatic swellings
		(c) Paste of the wood taken internally or used externally	(c) In obesity, urethral discharges, jaundice, and chronic skin diseases
		(d) Ingredient of medicated oil	Appetizer, febrifuge, and antitoxic; beneficial in skin diseases
			Cures haemoptysis and bilious fever
			In persistent dysentery and non-healing ulcers; promotes adhesion of fractured bones
			(d) For healing of wound in testicles after operation
Cāṅgeri, *Sū*. 46, 289	Indian sorrel *Oxalis corniculata* Linn.	As potherb	Astringent; cures piles and mesenteric disorders
Cavya, *Sū*. 38, 11; *Utt*. 39, 123 Syn.: *cavikā*	*Piper chava* Hunter.	(a) Taken internally	(a) In indigestion, colic pain, intestinal mucus, and catarrh
		(b) Ingredient of medicated *ghṛta*	(b) In erysipelas, fever, asthma, internal tumour, chlorosis, and anorexia
Chatrā, *Ci*. 30, 3	A variety of borage plant *Trichodesma indicum* Roxb.	Taken daily in conjunction with a special regimen of diet	A potent and general remedy for many diseases

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Cillī, *Sū*. 46, 266, 270-71; *Utt*. 17, 31	Goose-foot plant A variety of *Chenopodium album* Linn.	Used as an article of diet	Diuretic, laxative, tonic; cures intestinal parasitic growths; improves digestion and intellect, and invigorates eyesight
Citraka, *Sū*. 11, 6-10; 14, 28; 37, 9; 38, 3, 4, 10, 26, 29; *Utt*. 61, 19 Syn.: *hutāśana*	White leadwort *Plumbago zeylanica* Linn.	(a) As burnt ashes	(a) As caustic alkali
		(b) Ingredient of a paste	(b) For promoting bleeding For spontaneous bursting of non-suppurating wounds
		(c) Taken internally	(c) In poisoning, fevers, urinary diseases, and virulent skin diseases; aseptic In, migraine and internal abscesses In obesity, seminal weakness, piles, jaundice, and urinary calculi In intestinal catarrh, colic pain, and for purgation In indigestion, loss of breast milk, vaginal discharges and other female diseases
		(d) Ingredient of medicated *ghṛta* for internal use	(d) In poisoning, intestinal parasite, asthma, and insanity

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Coraka, *Sū*. 38, 12, 23; 46, 231, 248 Syn.: *tilaparṇikā*	Indian angelica tree *Angelica glauca* Edgw.	Taken internally (leaves)	In skin eruptions, swelling, poisoning, and fracture of bones In obesity, haemoptysis, vaginal discharges, menstrual disorders, and excessive mucous secretion
Cuccū, *Sū*. 46, 259, 261	A species of corchorus *Corchorus aestuans; C. capsularis; C. olitorus; C. trilocularis*	As potherb in daily diet	Vermifuge; beneficial in ulcers and deranged humours
Dāḍima, *Sū*. 38, 21; 46, 144	Pomegranate tree *Prunica granatum* Linn.	Fruits taken internally	Cordial, cooling, appetizer and roborant
Dantaśaṭha, *Sū*. 46, 165	Lemon tree *Citrus limonum* Sp. Riss.	As above	In thirst as cordial, appetizer; in the formation of blood and bile in the system
Dantī, *Sū*. 11, 16; 37, 9; 38, 14; 39, 3; *Utt*. 44, 14 Syn.: *nikumbha*	Wild croton *Baliospermum montanum* Muell & Arg.	(a) Dried and finely powdered (b) Pasted with the droppings of pigeons and storks (c) Taken internally (d) Decoction of the roots taken internally (e) Cooked with sixteen times its weight of urine of she-buffalo	(a) For preparing caustic alkalis for cauterization (b) Brings spontaneous bursting of non-suppurating boils (c) For acute constipation, abdominal gland, and abdominal dropsy (d) As purgative (e) In jaundice

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Darbha, Sū. 38, 4, 5, 36	Sacrificial grass (large variety) *Poa cyanosuroides* Retz.	(a) Taken internally	(a) In migraine and internal abscesses; reduces obesity
		(b) Taken with cow's milk	(b) In urinary diseases and calculi; in haemoptysis
Dāruharidrā, Sū. 37, 22-23; 38, 18, 26; *Utt.* 40, 41 Syn.: *dārvī*	Indian berberry tree *Berberis asiatica* DC.	(a) Ingredient of ointment	(a) For quick healing of wounds
		(b) Taken internally	(b) For purifying breast milk; in dysentery, indigestion, loss of breast milk, uterine and vaginal disorders
		(c) Cooked with clarified butter along with other drugs for internal use	(c) In dysentery
Dāsīkurṇṭaka, Sū. 38, 3	*Barleria prionitis* Linn. (Blue flowered)	Taken internally or used externally	In poisoning, fevers, and urinary troubles; antiseptic
Devadāru, Sū. 37, 18; 38, 12-13; *Ci.* 2, 50; 5, 8; 20, 15 Syn.: *bhadradāru, dāru*	Deodar tree *Cedrus deodara* Loud	(a) Ingredient of a paste	(a) Subdues swellings
		(b) Gum used for fumigation	(b) For quick healing of wounds
		(c) Ingredient of massage oil	(c) In wasting and atrophy of the leg muscles
		(d) Ingredient of hair oil	(d) In baldness
		(e) Ingredient of medicated oil	(e) For healing of wound in testicles after operation
		(f) Taken internally	(f) In skin eruptions, blood poisoning, and chronic dysentery; purifies breast milk

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Dhāmārgava, *Sū*. 39, 2	Sponge-gourd plant *Luffa actangula* Roxb. (Yellow flowered)	Decoction of the fruits taken internally	As emetic
Dhanvana, *Sū*. 46, 166	Indian linden tree *Grewia tiliaefolia* Vahl.	Fruits taken internally	Astringent; subdues deranged *pitta* and *kapha*
Dhātakī, *Sū*. 38, 22; *Ci*. 17, 15	Fulsee-flower tree *Woodfordia floribunda* Sals.	(a) Taken internally	(a) In persistent dysentery and non-healing wounds; promotes adhesion of fractured bones
		(b) Ingredient of paste	(b) Quick healing up of traumatic sinuses
Dhava, *Sū*. 37, 24; 38, 5, 6, 10	Crane tree	(a) Ingredient of dusting powder	(a) For quick healing of wounds
Syn: *vīrataru*	*Anogeissus latifolia* Wall.	(b) Taken internally or applied externally	(b) In obesity, urethral discharges, jaundice, chronic skin diseases, piles, seminal weakness, and urinary calculi
Dhuttura, *Ci*. 17, 20	Dhatura plant *Dhatura fastuosa* Linn.	Ingredient of ointment for external application	In sinus
Dhyāmaka, *Sū*. 38, 12	A species of grass *Andropogan lamgier* Desf.	Taken internally	In deranged *vāyu* and *kapha*, poisoning, and in skin diseases
Drākṣā, *Sū*. 38, 21; 46, 187, 188; *Utt*. 12, 19, 21	Grape vine *Vitis vinifera* Linn.	(a) Fruits taken internally	(a) Cordial, cooling, appetizing; beneficial in the derangement of *vāyu*, and in urinary diseases Laxative, beneficial to the voice; in haemoptysis, fever, asthma, and consumption
		(b) Ingredient of eye-ointment	(b) In gradual development of a milky film over the eyes

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Dravantī, *Sū*. 11, 10; 39, 3; *Ka*. 1, 23 Syn.: *muṣalaparṇī*	*Anthericum tuberosum* Roxb.	(a) Dried and finely powdered	(a) For preparing cauterizing alkalis
		(b) Roots taken internally	(b) As purgative
		(c) Juice as an ingredient of plaster	(c) To check bleeding from the mouth and nose; in falling of hair, accompanied by violent headache caused from the use of poisoned plaster
Dūrvā, *Sū*. 37, 3	Couch grass *Cynodon dactylon* Pers.	Ingredient of medicated plaster	In inflammations and traumatic swellings
Eḍaka, *Ci*. 7, 10		Boiled with milk along with other drugs for internal use	In dysuria
Elā, *Sū*. 14, 28; 38, 11-12; *Ci*. 2, 50; 20, 15	Lesser cardamom plant *Eletteria cardamomum* W. et Maton	(a) Ingredient of medicinal plaster	(a) For inducing bleeding
		(b) Decoction used as dressing for lints and plugs	(b) Cleansing and antiseptic
		(c) Taken internally	(c) In indigestion, colic pain, internal tumour, intestinal mucus, catarrh, and gastralgia; beneficial in *vāyu* and *kapha;* antitoxic
		(d) Ingredient of medicated oil	(d) For healing up of wound in testicles after operation
		(e) Ingredient of ointment	(e) For baldness

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Elāvāluka, *Sū*. 38, 7; *Utt*. 62, 12	Cherry tree *Prunus cerasus* Linn. Syn.: *Feronia elephantum*	(a) Taken internally	(a) Antitoxic, antiseptic, astringent and styptic; in female disorders
		(b) Ingredient of medicated *ghṛta* for internal use	(b) Cures insanity, epilepsy, emaciation, sterility, impotency, consumption, and internal tumour
Eraṇḍa, *Sū*. 16, 4, 18; 38, 2; 39, 3, 6; *Ci*. 1, 99; 4, 24 Syn.: *gandharvahastā*	Castor-oil plant *Ricinus communis* Linn.	(a) Ingredient of massage oil	(a) For growth of local flesh in ear lobe
		(b) Taken internally	(b) In respiratory trouble, wasting diseases, internal tumour and in deranged *vāyu*
		(c) Milky exudation or a decoction of the fruits taken internally	(c) As purgative
		(d) Expressed oil of the seeds taken internally	(d) As a potent purgative
		(e) Leaves used as bandage	(e) For healing up of ulcers due to deranged *vāyu*
		(f) Roots as ingredient of ointment	(f) For healing up of ulcers in pierced ear. lobe
		(g) Ingredient of medicated salt	(g) In rheumatism
Ervāruka, *Sū*. 45, 106; 46, 226, 229	Garden cucumber plant *Cucumis momordica* Linn.	(a) Green fruits taken	(a) Diuretic, stomachic, and laxative
		(b) Oil of the seeds taken internally	(b) As above; also cooling; increases slimy secretion of the organs

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Gāṇḍīra, *Sū*. 46, 247	A species of cucumber *Cucumis utilatissimus* Linn.	As potherb in diet	Sharp and heat-producing; suppresses stool and urine; subdues deranged humours
Gāṅgerukī, *Sū*. 46, 166, 175, 177	*Sida spinosa* Linn.	Fruits taken internally	Astringent; subdues deranged *pitta* and *kapha*
Gaurasarṣapa, *Sū*. 43, 4	A variety of the mustard plant *Sinapis glauca* Roxb.	Pasted with salt and taken internally	As emetic; in catarrhal fever and internal abscesses
Gilodya, *Ci*. 11, 8	*Ceropegia tuberosa* Roxb.	Ingredient of a medicated liquor	Tonic
Godhūma, *Sū*. 14, 29; 37, 11; 46, 42; *Ci*. 5, 8	Wheat *Triticum vulgare* Linn.	(a) Ingredient of a powder	(a) Styptic and purifying
		(b) Applied as poultice	(b) Causes quick secretion and elimination of pus
		(c) Article of diet	(c) Sweet, heavy, tonic, laxative, rejuvenscent; subdues deranged *vāyu* and *pitta;* beneficial in adhesion of fractured bones
Gojī, *Sū*. 8, 11-12; 46, 273; *Ci*. 9, 11; 17, 11; *Ka*. 6, 2; *Utt*. 24, 20 Syn.: *gojihvā*	*Elephantopus scaber* Linn.	(a) Ingredient of poultice for fomentation	(a) For carbuncles and boils
		(b) Ingredient of alkaline solution	(b) In poisoning
		(c) Leaves used externally	(c) For secreting or evacuating accumulated pus or phlegm from eyelid or cavity of mouth

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(d) Used in the preparation of medicated oil	(d) In sinus
		(e) Ingredient of paste	(e) In suppurated skin diseases
		(f) Decoction used as gurgle	(f) In catarrh
		(g) Taken as potherb	(g) In haemoptysis, skin diseases, urinary troubles, fever, cough, and anorexia
Gonasī, *Ci*. 30, 4	Possibly refers to some *Arisaema* species	Taken internally	Vitalizing and rejuvenating
Gopaghaṇṭā, *Sū*. 38, 3; *Ci*. 11, 8; *Ka*. 6, 2	*Flacourtia sapida* Roxb.	(a) Taken internally or used externally	(a) In poisoning, fever, and urinary troubles; antiseptic
		(b) Ingredient of medicated liquor and gruel	(b) In urinary diseases
		(c) Ingredient of alkaline solution	(c) In poisoning
Gṛñja, *Utt*. 56, 11	A variety of *Allium sativum* Linn.	Ingredient of pulverized compound, taken internally	In indigestion, colic pain, anorexia, and in severe diarrhoea
Guḍucī, *Sū*. 12, 18; 37, 20; 38, 3, 14, 16, 35; *Ci*. 2, 50, 54 Syn.: *amṛta*, *gulañca*	*Tinospora cordifolia* Miers. Syn.: *Menispermum cordifolium* Willd.	(a) Ingredient of ointment	(a) For major burns
		(b) Ingredient of dressing for lint	(b) For quick healing of wounds
		(c) Taken internally or applied externally	(c) In poisoning, fever, and urinary diseases; aseptic

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
			In acute constipation, abdominal gland, and abdominal dropsy
			Appetizer, febrifuge, and antiseptic; beneficial in skin diseases
			In haemoptysis, oedema, urethral discharges, and seminal diseases
		(d) Ingredient of medicated oil	(d) For healing up of wounds in testicles after operation
Guggulu, *Sū*. 38, 12; 42, 12, 18; *Ci*. 5, 44; *Utt*. 61, 16 Syn.: *palaṅkaṣā*	*Balsamodendron mukul* Hooker.	(a) Taken internally	(a) In skin eruptions and blood-poisoning
		(b) Tender leaves taken internally	(b) Constructive and rejuvenating tonic
		(c) Taken internally as a pungent substance	(c) In obesity, sluggishness of the liver and bowels, internal tumours, fistula, intestinal parasites, itches, leucoderma, sinus, oedema, malignant tumours, and sudden paralytic seizures
		(d) Ingredient of decoction cooked with clarified butter and goat's urine	(d) In epilepsy
Gundrā, *Sū*. 38, 5	Elephant grass *Typha angustifolia* Linn. Syn.: *T. elephantina* Roxb.	Taken internally	In urinary diseases and calculi; beneficial in deranged *vāyu*

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Guñjā, *Sū*. 11, 7; *Ci*. 7, 4; 17, 4; 18, 7; 20, 15 Syn.: *kākanantī*, *kubjaka*	*Abrus precatorious* Linn.	(a) Burnt for preparing alkalis	(a) For cautery
		(b) Ingredient of thick ointment	(b) In erysipelas and other wide-spread skin eruptions
		(c) Leaves and fruits as ingredients of medicinal plaster	(c) In goitre and scrofula
		(d) Seeds as ingredient of paste	(d) In baldness
		(e) Decoction boiled with clarified butter for internal use	(e) In urinary calculi
		(f) Roots as an ingredient of medicinal plaster	(f) In glandular swellings
Haimavatī, *Sū*. 38, 26	*Acorus calamus* Linn. (White variety)	Taken internally	In uterine and vaginal disorders, purification of breast milk; digestive
Haṃsapadī, *Sū*. 38, 2	*Vitis pedata* Vahl.	Taken internally	In respiratory troubles, wasting diseases, and internal tumour
Hapuṣā, *Ci*. 5, 39	Juniper tree *Juniperus communis* Linn.	Leaves taken internally as ingredient of a bolus	In all forms of paralysis
Hareṇuka, *Sū*. 37, 12; 38, 11; 46, 31 Syn.: *hareṇu*, *reṇukā*	*Piper aurantiacum* Wall.	(a) Decoction used as dressing for lints and plugs	(a) Cleansing and antiseptic
		(b) Taken internally	(b) In intestinal mucus, anorexia, colic pain, catarrh, and internal tumour

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Haridrā, *Sū*. 14, 28; 38, 13, 25, 31, 35; *Ci*. 9, 12 Syn.: *rajanī*, *rātri*	Turmeric plant *Curcuma longa* Roxb.	(a) Ingredient of plaster	(a) For inducing bleeding
		(b) Ingredient of medicinal oil for local application	(b) For cleansing and sterilizing the interior of an ulcer
		(c) Taken internally	(c) For purifying breast milk; in chronic dysentery
			In indigestion, lack of breast milk, uterine and vaginal diseases
			In leprosy, malignant ulcers and other virulent skin diseases
			In haemoptysis, oedema, urethral discharges, and seminal disorders
		(d) Ingredient of ointment	(d) In ringworm
Harimantha, *Sū*. 46. 30, 294; *Ci*. 11, 4 Syn.: *caṇaka*	Chick pea *Cicer arietinum* Linn.	(a) Taken internally	(a) Subdues *pitta* and *kapha;* corrects deranged blood; reduces virile power
		(b) Taken as pulse in cooked preparation	(b) In urinary diseases
Harītakī, *Sū*. 38, 26, 29; 39, 2; 46, 206; *Ci*. 5, 12, 30; *Utt*. 21, 35 Syn.: *abhayā*, *amṛta*	Chebulic myrobalan *Terminalia chebula* Retz.	(a) Taken internally	(a) In indigestion, purification of breast milk, uterine and vaginal disorders
	-		Subdues deranged humours; cures skin diseases, urinary diseases, irregular fever; improves eyesight

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(b) Decoction of the fruits taken internally	(b) Aphrodisiac, general tonic, and febrifuge
		(c) Fruits taken internally	(c) As purgative; in ulcers, oedema, cutaneous affections; appetizing; improves eyesight
		(d) Decoction boiled with clarified butter	(d) For hysteric convulsions and epileptic fits
		(e) Powder of the bark as an ingredient of paste	(e) For running ears
		(f) Pasty mass of fruits taken with honey or treacle	(f) In blood-poisoning
Hastikarṇa, Sū. 45, 101	A kind of *Butea superba* Roxb.	Oil of the seeds taken internally	Laxative; in urinary diseases, intestinal parasites, and skin diseases
Hastipippalī, Sū. 38, 11; *Śā*. 10, 15; *Ci*. 18, 35; *Utt*. 52, 29; 61, 20 Syn.: *gajādināmā, gajapippalī ibhakṛṣṇā, śreyasī*	Elephant pepper plant *Scindaspus officinalis* Schott.	(a) Taken internally	(a) In indigestion, colic pain, abdominal glands, and intestinal catarrh
		(b) Powered and suspended in warm water	(b) Abdominal bleeding after child birth
		(c) Ingredient of hot poultice	(c) In goitre
		(d) Ingredient of medicated *ghṛta* for internal use	(d) In epilepsy, fever, consumption, asthma, and insanity
		(e) Ingredient of medicated treacle	(e) In chronic dysentery, cough and hoarseness; improves appetite; removes sterility

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
***Hiṅgu**, Sū.* 11, 10; 38, 11, 17; 46, 231, 238; *Ci.* 5, 30	Asafoetida plant *Ferula foetida* Regel.	(a) Mixed with alkalis	(a) For cauterization
		(b) Taken internally	(b) In indigestion, colic pain, abdominal gland, and internal catarrh
			Destroys fat and urinary calculi
		(c) Ingredient of potion	(c) In hysterical convulsions, and epileptic fits
		(d) As potherb	(d) As an appetizer, laxative; reduces colic pain; beneficial in indigestion
Ikṣu Sū. 38, 36; 45, 137-141 Syn.: *kāṇḍekṣu* (Twelve varieties with specific actions)	Sugarcane *Saccharum officinarum* Linn.	(a) Juice taken with milk	(a) In haemoptysis and urinary diseases
		(b) Article of diet	(b) Demulcent, tonic, spermatopoietic, and diuretic
Ikṣvāku, Sū. 38, 36; 45, 137-141	Bitter gourd *Lagenaria vulgaris* Seringe.	Fruits taken internally	As emetic
Indīvara, Sū. 38, 5, 20, 25; 46, 329 Syn.: *nīlotpala*	Blue lotus *Nyphaea stellata* Linn.	Taken internally	In urinary diseases and calculi, haemoptysis, poisoning, and burning sensation of the body
Indravṛkṣa, Sū. 11, 7	A variety of *Holarrhena antidysenterica* Wall. (White flowered and producing large-size fruits)	Burnt for preparing alkali	For cauterization

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Indrayava, *Sū*. 38, 3, 11; *Utt*. 39, 94 Syn.: *vṛkṣaka*	Seeds of *Holarrhena antidysenterica* Wall.	(a) Seeds taken internally or used for ointments	(a) In poisoning, fever, and urinary troubles; antiseptic In indigestion, colic pain, and in *kapha;* antitoxic and aseptic
		(b) Decoction of the seeds taken internally	(b) In fever caused from the aggravation of *kapha* humour
Iṅguda, *Sū*. 38, 8; 39, 8; 45, 101; 46, 198 Syn.: *iṅgudī*, *tāpasavṛkṣa*	Zachum oil plant *Balanities roxburghii* Planchon. Syn.: *Ximenia algyptiasa* Roxb.	(a) Taken internally	(a) Subdues deranged *vāyu*, *pitta* and *kapha;* antitoxic and aseptic
		(b) Oil of the seeds taken internally	(b) Laxative; beneficial in intestinal parasites, skin diseases, and uri nary diseases
Jalaśuka, *Sū*. 16, 17	*Commelina salicifolia* Roxb.	Thick aqueous decoction as an ingredient of massage cream	For promoting growth of normal healthy tissues after surgery

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Jambīra, *Sū*. 46, 164, 242	*Citrus medica* Linn.	Fruits taken internally	Digestive and antitoxic; cures halitosis, cough, hiccup, and poisoning; in constipation, colic pain, nausea, and asthma
Jambu, *Sū*. 38, 23	*Eugenia jambolana* Lamk.	Fruits taken internally	In obesity, vaginal discharges, and menstrual disorders; adhesion of fractured bones
Jātī, ***Sū***. **37, 14; 46, 209;** *Ci*. 2, 50	Nutmeg tree	(a) Roots as an ingredient of medicinal *ghṛta* or oil	(a) Cleanses and sterilizes the interior of ulcers; for healing up of wounds in testicles after operation
Syn.: ***jātīkośa***, ***jātīphala***	*Myristica fragrans* Houtt.	(b) Dried fruits taken internally	
		(c) Ingredient of medicated oil	(b) Cleansing; in halitosis
Jīmūtaka, ***Sū***. **39, 2; 45, 101**	Bristly luffa	(a) Fruits taken internally	(c) For healing up of wound after surgical operation
Syn.: ***jīmūta***	*Luffa pentandra* Roxb.	(b) Oil of the seeds taken internally	(a) As emetic
			(b) Laxative; beneficial in urinary diseases, intestinal parasites, and in skin diseases
Jīraka, ***Sū***. **38, 11; 46, 231;** ***Ci***. **5, 37;** ***Utt***. **42, 18**	Cumin seed	(a) Seeds taken internally	(a) In indigestion, colic pain, and intestinal catarrh
	Cuminum cyminum Linn.	(b) Taken as potherb	(b) Pungent, heat-making, and aromatic; cures ***vāyu*** and ***kapha***
		(c) Ingredient of medicated *ghṛta*	(c) In abdominal glands and colic pain

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Jīvana, *Sū*, 16, 16; 38, 17; 46, 259; *Utt*. 17, 31	Cork swallow-wort *Dendrobium macrei* Linn.	(a) Ingredient of massage oil	(a) For growth and alteration in shape of local flesh
Syn.: *jīvantī*		(b) Taken internally	(b) Increases secretion of semen and breast milk
		(c) Used as potherb in diet	(c) Invigorates eyesight
Jyotiṣmatī, *Sū*. 38, 8; 39, 3; 15, 101; *Ci*. 8, 13, 17-20; 9, 20	Balloon-vine, heart-pea or winter cherry	(a) An aqueous emulsion of the milky exudate taken internally	(a) For intestinal parasites, skin diseases, obesity, and poisoning
Syn.: *alavaṇa*, *pārāvatapadī*	*Cardiospermum helicacabum* Linn.	(b) Leaves taken internally	(b) As purgative
		(c) Ingredient of oil	(c) For purifying and imparting a natural colour to cicatrix, formed after surgery of sinuses in anal fistula
		(d) Oil of the seeds taken internally	(d) In head diseases, urinary diseases, intestinal parasites and in skin diseases
		(e) Ingredient of medicated *ghṛta*	(e) In severe skin diseases
Kacchurā, *Utt*. 40, 63, 66, 72	*Alhagi maurorum* Desv.	(a) Roots boiled in milk as a drink	(a) In chronic dysentery
		(b) Ingredient of drug	(b) In blood dysentery
Kadalī, *Sū*. 11, 6; 38, 7; 46, 181, 186	Banana tree	(a) Burnt for preparing alkalis	(a) For cautery
Syn.: *mauca*	*Musa sapientum* Linn.	(b) Fruits taken internally	(b) Antitoxic, antiseptic, astringent and styptic; in female diseases

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Kadamba, *Sū*. 38, 7, 23; 46, 159	*Anthocephalus cadamba* Miq.	Taken internally	Beneficial in haemoptysis; spermatopoietic; improves relish for food
Syn.: *nīpa*			Antiseptic, antitoxic, astringent, and styptic; in female disorders
			In obesity and haemoptysis
			Neutralizes poison generated in the system
Kadara, *Sū*. 38, 6	Gum arabic tree *Acacia arabica* Willd.	Taken internally or applied externally	In obesity, urethral discharges, jaundice, and chronic skin troubles
Kākadanī, *Ci*. 18, 27	*Capparis sepiaria* Linn.	Ingredient of plaster	In goitre
Kākolī, *Sū*. 38, 17	*Mimusops kauki* Linn.	Taken internally	Increases quantity of breast milk, virile potency; restorative
Kakkolaka, *Sū*. 46, 209	Cubeb pepper *Piper cubeba* Linn. Syn.: *Cubeba officinalis* Miq.	Dried fruits taken	Cleansing; in halitosis
Kālamāla, *Sū*. 38, 9	Shrubby basil (variety) *Ocimum gratissimum* Linn. (Black variety)	Taken internally	In dyspepsia, catarrh, cough, and asthma
Kālānusārī, *Sū*. 37, 19; *Ci*. 2, 50; *Utt*. 17, 10, 11 Syn.: *kālānusārivā*	*Limnanthemum cristatum* Griseb Syn.: *Menyathes cristata* Roxb.	(a) Ingredient of medicated oil (b) Ingredient of eye-salve	(a) For quick healing of wounds (b) In night-blindness

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
***Kālaśāka*, *Sū*. 46, 273**	Jute plant *Carchorus capsularis* Linn.	Cooked as potherb	Antitoxic
***Kālaskandha*, *Sū*. 38, 6**	*Telephrosis purpurea*	Taken internally or applied externally	In obesity, urethral discharges, jaundice, and chronic skin diseases
***Kalāya*, *Sū*. 46, 258**	Chickling vetch lentil *Lathyrus sativus* Linn.	Cooked as potherb	Subdues deranged *pitta* and *kapha*
Kampillaka*, *Sū*. 38, 14; 39, 3; 45, 101; *Ci*. 9, 35** **Syn.: *kāmpilla	*Mallotus philippinensis* Mull. Arg. Syn.: *Rottlera tinctoria* Roxb.	(a) Taken internally	(a) In acute constipation, intestinal paralysis, and abdominal swellings
		(b) Fruit and flower-pollen taken internally	(b) As purgative
		(c) Ingredient of medicated oil	(c) In sinus, malignant ulcer, and skin diseases
		(d) Oil of the seeds taken internally	(d) In urinary diseases, head diseases, and intestinal parasite
Kanakakṣīri*, *Sū*. 11, 10; 38, 14; 39, 3; *Ci*. 9, 12** **Syn.: *hemakṣīri*, *suvarṇakṣīri	*Cleome felina* Linn. Syn.: *Polanisia felina* DC.	(a) Dried and pulverised	(a) For alkalis in cautery
		(b) Taken internally	(b) In acute constipation, intestinal paralysis, and abdominal swelling
		(c) Roots taken internally	(c) As purgative
		(d) Ingredient of ointment	(d) In virulent forms of ringworm
***Kaṅguka*, *Sū*. 37, 24**	*Panicum italicum* Linn. Syn.: *Setaria italica* Kunth.	Ingredient of dusting powder	For quick healing of wounds

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Kaṇṭakārī, *Sū*. 37, 15; 38, 2, 15; 46, 273; *Ci*. 9, 19-20; 10, 10; *Utt*. 51, 38 Syn.: *hiraṇyapuṣpī*, *nidigdhikā*	Wild egg-plant *Solanum xanthocarpum* Schrad. Syn.: *S. Jacquinii* Willd.	(a) Ingredient of medicinal oil	(a) For cleansing and sterilizing wounds
		(b) Taken internally	(b) In respiratory troubles, wasting diseases, and abdominal swelling
		(c) Ingredient of medicated *ghṛta*	
		(d) Ingredient of plaster	In nausea and loss of appetite, haemoptysis, and dyspnoea
		(e) Ingredient of lambative	In fevers, chronic skin diseases, urinary diseases, cough, and hiccup
			(c) In persistent skin diseases
			(d) In leucoderma and glandular swelling
			(e) In asthma
Kaṇṭakī, *Sū*. 38, 3; *Ci*. 18, 7 Syn.: *vikaṅkata*	*Flacourtia ramontchi* L'Hert	(b) Ingredient of medicinal plaster externally	(a) In poisoning, fevers, and urinary troubles; antiseptic
		(b) Ingredient of medicinal plaster	(b) In glandular swelling
Kapītana, *Sū*. 38, 23	Flowering peepul tree *Thespesia populnea* Corr.	Taken internally (fruits)	In obesity, haemoptysis, vaginal discharges, and adhesion of fractured bones

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Kapittha, *Sū*. 46, 149; *Śā*. 10, 12; *Ci*. 9, 12; *Utt*. 21, 36	Wood-apple tree *Feronia elephantum* Corr.	(a) Fruits taken internally	(a) Subdues deranged *vāyu* and *pitta*
		(b) A decoction of the leaves used	(b) To bathe new-born baby
		(c) Juice as an ingredient of ointment	(c) In ringworm
		(d) Fruit-juice mixed with honey as ear-drop	(d) In running ears
Karamarda, *Sū*. 38, 35	Bengal currant *Carissa carandas* Linn. Syn.: *C. congesta* Linn.	Taken internally	In haemoptysis, oedema, urethral discharges, and seminal disorders
Karañja, *Sū*. 11, 6; 37, 9; 38, 3, 8, 14; 39, 9; 45, 101; 46, 205; *Ci*. 20, 15 Syn.: *ciravilva*, *karañjaka*, *naktamāla*	Indian beach tree *Pongamia glabra* Vent.	(a) Burnt for preparing alkali	(a) As aid to surgical bleeding
		(b) Pasted with droppings of pigeons, storks, etc.	(b) To induce spontaneous bursting of non-suppurating wounds
		(c) Taken internally	(c) In poisoning, fevers, urinary diseases, migraine, internal abscesses, and jaundice; reduces obesity For eradicating worms and skin diseases In acute constipation, intestinal paralysis, and abdominal glands
		(d) As decoction of the fruits	(d) As emetic

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(e) Fruits taken internally	(e) In leprosy, internal tumours, piles, and urinary discharges
		(f) Oil of the seeds taken internally	(f) Laxative, beneficial in head diseases, urinary diseases, and in intestinal parasites
		(g) Ingredient of hair oil	(g) In baldness
Kāravellika, *Sū*. 38, 3; 44, 2; 46, 273, 283; *Utt*. 17, 31 Syn.: *kāravellaka, suṣavī*	*Momordica charantia* Linn.	(a) Expressed juice of the fruits taken internally	(a) As purgative
		(b) As potherb	(b) In fevers, chronic skin diseases, urinary diseases, hiccup, and cough
		(c) Used regularly in diet	(c) Invigorates eyesight
		(d) Taken internally or applied externally	(d) In poisoning, and fever; antiseptic
Karavī, *Sū*. 46, 240	*Gardenia gummifera* Linn. f.	(a) Leaves taken internally	(a) Appetizing and aromatic
		(b) Ingredient of massage oil or plaster	(b) In wasting diseases, and atrophy of the leg muscles
Kārāvī, *Sū*. 46, 240	Black cummin *Nigella indica* Linn. Syn.: *N. sativa* Linn.	Article of diet	Appetizing and aromatic
Karavīra, *Ci*. 20, 15	*Nerium indicum* Mill.	Ingredient of medicinal paste	In alopecia

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Karīra, *Sū*. 46, 201-202, 273, 300; *Utt*. 17, 31	Caper tree *Capparis aphylla* Roth.	(a) Fruits and flowers taken internally	(a) Heating; subdues *vāyu* and *pitta*, increases urine and stool
		(b) Leaves cooked as potherb	(b) In fevers, chronic skin diseases, urinary diseases, cough, and hiccup
		(c) Used regularly in diet	(c) Invigorates eyesight
Karkandhu, *Sū*. 46, 146, 244 Syn.: *surasā*	Wild jujuba tree *Zizyphus nummularia* W & A	Fruits taken in the ripe stage	Subdues deranged *vāyu* and *pitta*: purgative
Karkāru, *Sū*. 45, 106; 46, 226	*Cucumis melo* Linn.	(a) Green fruits taken internally	(a) Diuretic, stomachic, and laxative
		(b) Oil of the seeds taken internally	(b) Increases slimy secretions of the body; impairs digestion; increases urine and stool
Karkaṭākhya, *Sū*. 38, 17; *Ci*. 2, 28 Syn.: *karkaṭaśṛṅgī*	*Rhus succeodanea* Linn. Syn.: *R. acuminata* DC.	(a) Ingredient of medicated oil	(a) For quick healing of wounds
		(b) Taken internally	(b) Increases secretion of semen and breastmilk; spermatopoietic
Karkoṭaka, *Sū*. 46, 273; *Utt*. 17, 31	*Momordica mixta* Roxb.	Taken regularly as potherb	In fevers, chronic skin diseases, urinary diseases, cough, and hiccup; invigorates eyesight
Kārpāsī, *Utt*. 21, 34	Levantine cotton tree *Gossypium herbaceum* Linn.	Fruit-juice mixed with honey used as ear-drops	In discharge of pus from ears

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Karpūra, Sū. 46, 210	Camphor *Cinammomum camphora* Nees et Eber	Taken internally	Cleansing; in halitosis
Karvudāra, Sū. 39, 2; 45, 103	White mountain ebony *Bauhinia racemosa* Lamk. Syn.: *B. parviflora* Vahl.	(a) Roots taken in decoction	(a) As emetic
		(b) Oil of the seeds taken internally	(b) Increases slimy secretions of the organs; impairs digestion, and increases stool and urine
Kāśa, Sū. 38, 5, 36; 39, 3	Thatch grass *Saccharum spontaneum* Linn.	(a) Taken internally	(a) In urinary diseases and calculi
		(b) Taken with cow's milk	(b) In haemoptysis and urinary diseases
		(c) Roots taken internally	(c) As purgative
Kāśamarda, Sū. 38, 9; 46, 231, 245	*Cassia sophora* Linn. Syn.: *Senna sophora* Roxb.	Taken internally	In dyspepsia, catarrh, cough, and asthma; digestive
Kaśeruka, Sū. 46, 328, 333	Rush nut *Scirpus kysoor* Clark.	Bulbs taken internally	Cooling and stool-forming
Kāśmarī, Sū. 38, 19, 22-23; 46 188-189 Syn.: *kāśmarya, nandīvṛkṣa*	White teak *Gmelina arborea* Linn.	Taken internally	For haemoptysis and bilious fever; promotes adhesion of fractured bones
			Appetizer; subdues deranged *vāyu* and *pitta;* cures asthma and breathing troubles

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
			Diuretic, blood purifier, beneficial to the intellect and growth of hair; as a rejuvenating tonic
			In persistent dysentery, non-healing wounds, obesity, and vaginal disorder
Kaṭaka, Sū. 38, 21; *Utt.* 12, 20	Clearing nut tree *Strychnos potatorum* Linn.	(a) The fruits taken	(a) Cordial, cooling, and appetizer; cures urinary troubles
		(b) Ingredient of eye-salve	(b) For opacity of the cornea and consequent loss of vision
Kaṭphala, Sū. 38, 9, 21, 31	Bay-berry tress *Myrica sapida* Wall.	Taken internally and used externally	In dyspepsia, catarrh, cough, and asthma
			Cooling, cordial and appetizer
			In leprosy, malignant ulcers and other virulent skin diseases
Kaṭurohiṇī, Sū. 37, 14; 38, 11, 16, 26; 46, 273, 274	Hellebore plant *Picorrhiza kurroa* Royle.	(a) Cooked as potherb	(a) In fevers, chronic skin diseases, urinary diseases, cough, and hiccup
Syn.: *kaṭṭarohiṇī, kaṭuka kaṭukī, kaṭukikā*		(b) Ingredient of medicinal oil	(b) For cleansing and sterilizing the interior of an ulcer
		(c) Taken internally	(c) In indigestion, colic pain, and intestinal catarrh
			Antitoxic and febrifuge; beneficial in skin diseases

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
			In vaginal discharges and other female diseases
Keśara, *Sū.* 38, 12; *Ci.* 9, 20 Syn.: *keśarāhva*	Fragrant poon *Mimusops elengi* Linn.	(a) Taken internally	(a) In skin eruptions and blood poisoning
		(b) Ointment made from concentrated extract	(b) In advanced cases of leprosy with damage to fundamental tissues
Kevuka, *Sū.* 46, 273	*Colocasia antiquoram*	As potherb in diet	In haemoptysis, fever, dyspnoea, and cough
Khadira, *Sū.* 38, 6; *Ci.* 9, 36-37; 10, 15-19; *Utt.* 52, 15 Syn.: *gāyatrī*	Catechu tree *Acacia catechu* Willd.	(a) Taken internally or applied externally	(a) In obesity, urethral discharges, and jaundice
		(b) Pith pasted along with other drugs in cow's urine for internal use	(b) In cough
		(c) Used as principal ingredient in many preparations for internal use	(c) In chronic and suppurating skin diseases In prolongation of life time
Kharapuṣpa, *Sū.* 38, 9	A variety of *Centipera minuta* Benth. Syn.: *Artemisia sternutatoria* Roxb.	Taken internally	In dyspepsia, catarrh, cough, and asthma
Kharjura, *Sū.* 46, 187, 190	The date palm *Phoenix sylvestris* Linn.	Fruits taken internally	Checks waste and degeneration of bodily tissues; curative of ulcers and haemoptysis

Name, references; synonyms, if any	English/Latin name	Mode of use	Mode of use
Kirātatikta, Sū. 38, 3; 45, 102; 46, 273	Chiretta plant *Swertia chirata* Ham. Syn.: *Gentiana chirayita* Roxb. *Agathotes chirata* D. Don. *Ophelia chirata* Griseb.	(a) Taken internally or used externally	(a) In poisoning, fevers, and urinary diseases; antiseptic
		(b) Cooked as potherb	(b) In chronic skin diseases, cough, and hiccup
		(c) Oil of the seeds taken internally	(c) Increases slimy secretion of the organs, urine, and stool; impairs digestions
Kodrava, Sū. 15, 32; *Ci.* 17, 21 Syn.: *karadūṣa*	*Paspalum scorbiculatum* Linn.	(a) Ingredient of medicinal oil	(a) For sinuses
		(b) Ingredient of internal prescriptions	(b) Cleanses the internal channels of the body and reduces obesity
Kola, Sū. 39, 6; 45, 106; 46, 102, 146	A jujuba tree *Zizyphus jujuba* Lamk.	(a) Oil of the seeds taken internally	(a) Increases slimy secretion of the organs, urine, and stool; impairs digestion
		(b) Ripe fruits taken internally	(b) Sweet, demulcent, and purgative; rectifies deranged *vāyu*
Kośāmra, Sū. 38, 23; 46, 160-161	A kind of mango tree *Mangifera sylvatica* Roxb.	Fruits taken internally	In obesity, haemoptysis, vaginal discharges, and menstrual disorders
			Astringent, stomachic, and appetizer; subdues deranged *vāta* and *pitta*
Kośātakī, Sū. 11, 7; 37, 14; 46, 273-274; *Ci.* 2, 65-66 Syn.: *jālinī*	*Luffa amara* Roxb.	(a) Cooked as potherb	(a) In fevers, chronic skin diseases, urinary diseases, cough, and hiccup

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(b) Ingredient ot ointment	(b) For cleansing and sterilization of ulcer
		(c) Ingredient of medicated oil	(c) In bad type of ulcers
		(d) Burnt for preparing alkali	(d) For cautery
Kovidāra, ***Sū***. 39, 2; 46, 298	*Bauhinia variegata* Linn.	(a) Roots taken internally	(a) As emetic
		(b) Flowers taken internally	(b) Cures haemoptysis
Kramuka, ***Sū***. 38, 6, 14	Areca-nut tree	Taken internally or applied externally	In obesity, urethral discharges, jaundice, and chronic skin diseases
	Areca catechu Linn.		In acute constipation, intestinal paralysis, and abdominal glands
Kṛṣṇasārivā, ***Sū***. 38, 2	Black variety of Indian *Sarsaparila*	Taken internally	Beneficial in respiratory troubles and wasting diseases
	Possibly refers to *Cryptolepis fruitescens*		
Kṛtavedhana, ***Sū***. 39, 2; 45, 101; ***Śā***. 10, 18; ***Utt***. 55, 39	Bitter luffa plant *Luffa acutangula* Roxb.	(a) Wood burnt for preparing alkalis	(a) For cautery
		(b) Ingredient of medicinal paste for external application	(b) In retention of stool
		(c) Fruits taken internally	(c) As emetic
		(d) Dried leaves burnt for local fumigation	(d) In retention of the placenta

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(e) Oil of the seeds taken internally	(e) In urinary diseases, head diseases, intestinal parasites, and suppurating skin diseases
Kṣavaka, *Sū*. 38, 9; 46, 313	Sneeze-wort *Centipeda orbicularis* Lour	(a) Taken internally	(a) In dyspepsia, catarrh, cough, and asthma
		(b) Cooked as potherb	(b) Astringent and corrective of excessive secretion of fluids
Kṣirakākolī, *Sū*. 38, 7	A variety of *Mimusops kauki* Linn.	Taken internally	Increases secretion of semen and breast milk
Kṣīrapalāṇḍu, *Sū*. 46, 257	A variety of onion *Allium cepa* Linn.	As potherb	Improves all bodily secretions and metabolic products, intellect as well; roborant; cures haemoptysis
Kṣīraśuklā, *Sū*. 16, 17-18 Syn.: *payasyā*	Milky yam A variety of *Ipomoea digitata* Linn.	(a) The exudations or milky juice as ingredient of massage creams	(a) For promoting growth of normal healthy tissues after surgery
		(b) Ingredient of medicinal oil	(b) For achieving elongation, or alteration in shape, of local flesh
Kṣudrasahā, *Sū*. 38, 2, 17 Syn.: *mudgaparṇī*	A kind of kidney bean *Phaseolus trilobus* Wall. Syn.: *P. aconifolias* Jacq.	Taken internally	Beneficial in respiratory troubles, wasting diseases, and in abdominal glands
			Increases secretion of semen and breast milk; sparmatopoietic
Kucandana, *Sū*. 38, 6, 16, 19; 39, 7 Syn.: *kāleyaka*	Yellow sandal tree *Santalum flavum* Linn.	Taken internally or applied externally	In obesity, urethral discharges, and jaundice; appetizer, febrifuge, and antitoxic; beneficial in skin diseases

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
			Cures haemoptysis and bilious fevers; subdues deranged *pitta*
			In persistent dysentery and non-healing ulcers; promotes adhesion of fractured bones
Kulāhala, *Sū*. 38.9	*Celsia coromandelina* Roxb.	Taken internally	In dyspepsia, catarrh, cough, and asthma
Kumbhīka, *Sū*. 38, 22	*Pistia stratiotes* Linn.	Taken internally	In persistent dysentery and non-healing ulcers; promotes adhesion of fractured bones
Kumuda, *Sū*. 38. 25; 46, 302 Syn.: *aravinda*	White water-lily *Nymphoea alba* Linn.	(a) Taken internally	(a) In blood poisoning, heart diseases, and syncope
		(b) Flowers as an article of diet	(b) Demulcent, pleasing, and cooling
Kunduruka, *Sū*. 38, 12	*Boswelia thuifera* Colebr. Syn.: *B. serrata* Colebr.	Taken internally	In skin eruptions and blood poisoning
Kuṅkuma, *Sū*. 38, 12; 46, 307	Saffron plant *Crocus sativus* Linn.	(a) Taken internally	(a) In skin eruptions and blood poisoning
		(b) Flowers as an article of diet	(b) Antitoxic; subdues *vāyu* and *pitta*
Kuruṇṭaka, *Sū*. 38, 3, 5; 46, 290, 309 Syn.: *kuraṇṭikā*	*Barleria prionitis* Linn. (Yellow variety)	(a) Taken internally and used externally	(a) In poisoning, fevers, and in calculi and other urinary diseases; antitoxic
		(b) Flowers as an article of diet	(b) In deranged *pitta* and *kapha*
		(c) As potherb	(c) Laxative; subdues deranged *kapha* and *pitta*

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Kuruvaka, *Sū*. 46, 290, 309	*Barleria prionitis* Linn. (Red variety)	As potherb	Laxative; subdues deranged *kapha* and *pitta*
Kuśa, *Sū*. 38, 5, 36; 39, 3	Sacrificial grass (small variety) *Eragrotis cyanosuroides* Linn.	(a) Taken internally	(a) In urinary diseases and calculi
		(b) Taken with cow's milk	(b) In haemoptysis and urinary diseases
		(c) Roots taken internally	(c) As purgative
Kuṣmāṇḍa, *Sū*. 45, 106; 46, 220, 222; *Ci*. 18, 22 Syn.: *karakāruka*, *puṣpaphala*,	White gourd plant *Beninkasa cerifera* Savi. Syn.: *Curcubita pepo* Roxb.	(a) Cooked as vegetable	(a) Diuretic; beneficial in loss of mental power, mental aberrations, and lunacy
		(b) Oil of the seeds taken internally	(b) Increases slimy secretion of the organs, formation of stool and urine; impairs digestion
		(c) Ingredient of poultice	(c) In goitre
Kuṣṭha, *Sū*. 14, 28; 38, 12, 26; 46, 166, 178; *Śā*. 10, 18; *Ci*. 9 12, 15 Syn.: *puṣkara*	Orris root; Indian costus *Saussurea auriculata* Bth. et Hf. Syn.: *Aplotaxis auriculata* DC.	(a) Ingredient of plaster	(a) Aid to surgical bleeding
			Matures and suppurates a non-suppurating boil; in venereal sores
		(b) Taken internally	(b) Skin eruptions and blood poisoning
			In indigestion, loss of breast milk, uterine and vaginal disorders
		(c) A suspension in cow's urine taken internally	(c) In retention of the placenta

Name, references: synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(d) Ingredient of ointment	(d) In ringworm
		(e) Fruits taken as an article of diet	(e) Astringent and tonic
Kustumburu, *Sū*. 38, 24; 46, 231, 241	Coriander plant *Coriandrum sativum* Linn.	Dried seeds taken internally	In nausea and loss of appetite; allays thirst; alleviates burning sensation of the skin; subdues deranged humours; purifies internal channels
Kuṭaja, *Sū*. 11, 7; 38, 3, 13, 15, 31; 39, 2; 46, 300	Kurchi plant *Holarrhena antidysenterica* Wall. Syn.: *Echites antidysenterica* Roxb.	(a) Burnt for preparing alkali	(a) For cautery
		(b) Taken internally or used externally	(b) In poisoning, fevers, and urinary troubles; antiseptic and vermifuge In malignant ulcers, leprosy and other virulent skin diseases; curative of diseases caused from derangement of *kapha* and *pitta*
		(c) Seeds taken internally	(c) Purifies breast milk; cures amoebic dysentery
		(d) Fruits as diet	(d) In loss of appetite, persistent nausea, and urinary troubles
		(e) Fruits taken internally	(e) As emetic
		(f) Flowers taken internally	(f) In malignant skin diseases
Kuvalaya, *Sū*. 38, 25; 46, 303	A variety of water-lily *Nymphaea esculenta* Linn.	(a) Taken internally	(a) In blood poisoning, heart diseases, syncope, nausea thirst, and fainting fit
		(b) Flowers as diet	(b) Demulcent and cooling

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
***Lākṣā*, *Sū*. 38, 31; *Ci*. 10, 12, 14**	Lac tree *Cocus lacca* Kerr.	(a) Taken internally or applied externally	(a) In malignant ulcers, leprosy and other serious skin diseases; curative of diseases caused from derangement or *kapha* and *pitta*
		(b) Ingredient of iron compounds for internal use	(b) In serious skin disetses; jaundice, and insanity
***Lakṣmaṇā*, *Śā*. 2, 32**	*Atropa mandragora*	Juice used as nasal drop	In child-birth
***Lakuca*, *Sū*. 46, 142, 154**	*Artocarpus lakooca* Roxb.	The fruits taken as diet	Produces temporary stoppage of semen formation (temporary sterility in males)
***Lambā*, *Ci*. 19, 27**	**A kind of bitter-gourd or cucumber** *Cucumis satiuus* Linn. (a variety)	As an ingredient of a mixture for internal use	In eliphantiasis, scrofula, and goitre
Lāṅgalakī*, *Sū*. 11, 10; 37, 12: 38, 8; *Ci*. 2, 65; 10, 18** **Syn.: *indrapuṣpī*, *lāṅgalikī*, *lāṅgalāhva	Superb lily *Gloriosa superba* Linn.	(a) Dried and finely powdered	(a) In caustic alkalis used for cauterization
		(b) A suspension in cow's urine, used internally	(b) In retention of the placenta
		(c) Ingredient of medicinal oil for external use	(c) In malignant ulcers
		(d) Taken internally or applied externally	(d) In obesity, and skin diseases
		(e) Decoction used as dress for lints and plugs	(e) Cleansing and antiseptic

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Latākasturikā, *Sū*. 46, 211	*Abelmoschus moschatus* Moench. Syn.: *Hibiscus abelmoschus* Linn.	Fruits as an article of diet	(a) Cleansing, cooling, laxative, diuretic; cures halitosis
Lavalī, *Sū*. 46, 195	Star-gooseberry tree *Phyllanthus distichus* Muell.	The fruits taken internally	Appetizing and refreshing
Lavaṅga, *Sū*. 46, 209; *Ci*. 22, 43 Syn.: *śrī*	Clove plant *Eugenia coryophyllata* Thurberg. Syn.: *Caryophyllus aromaticus* Linn.	(a) The dried flowers taken internally (b) Ingredient of a mixture for fumigation	(a) Cleansing; in halitosis (b) In all affections of mouth
Lodhra, *Sū*. 11, 7; 37, 6, 38, 7, 14, 22-23, 23-24; 39, 3 Syn.: *rodhra*, *tilvaka*	Lodh tree *Symplecos racemosa* Roxb.	(a) Burnt for preparing alkali internally (b) Pasted with mustard oil and salt for use as plaster (c) Ingredient of medicated oil and powder (d) Taken internally (e) Barks taken internally	(a) Styptic (b) Subdues swellings (c) For quick healing of wounds (d) Astringent, antitoxic, anti-fat, antiseptic; in female diseases and burning sensation of body For acute constipation, intestinal paralysis, abdominal gland, and dropsy In persistent dysentery and non-healing ulcers; promotes adhesion of fractured bones (e) As purgative

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Loṇikā, *Sū*. 46, 290-91	Puaslane plant *Portulaca oleracea* Linn.	Cooked as potherb	Laxative; subdues excessive formation of *kapha*
Madana, *Sū*. 37, 6; 38, 3, 10; 39, 2; 43, 2-4; *Śā*. 10, 10; *Ci*. 18, 35; 25, 18 Syn.: *karahāṭa*, *piṇḍitaka*	Emetic nut *Randia dumetorum* Lamk. Syn.: *Posoqueria dumetorum* Roxb.	(a) The nuts taken internally or used externally	(a) Antiseptic, antitoxic and febrifuge; in chronic skin diseases, urinary troubles, obesity, seminal weakness, piles, jaundice, and urinary calculi
		(b) Fruits taken internally	(b) As emetic
		(c) Dried, powdered and compounded with other drugs	(c) As powerful and instantaneous emetic
		(d) Burnt for local fumigation	(d) In protracted delivery in child-birth
		(e) As ingredient of medicinal paste	(e) In goitre and scrofula
		(f) The flowers as ingredient of hair tonic	(f) For luxurious growth of hair of natural colour
		(g) As an ingredient of medicinal plaster	(g) Subdues swelling
Madayantī, *Ci*. 2, 65	Henna plant *Lawsonia alba* Lamk.	As ingredient of oil for external application	In malignant ulcers
Madhūka, *Sū*. 37, 3; 38, 17, 19, 21, 23, 25	*Bassia latifolia* Roxb.	(a) Taken internally	(a) Increases secretion of semen and breast-milk. Restorative and elixir. Cures haemoptysis, burning sensation of the body, dysentery,

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
			angina pectoris, syncope, fever, and vaginal disorders; subdues deranged *vāyu* and *pitta*
		(b) As ingredient of medicinal plaster	(b) In swelling due to deranged *pitta*, and vitiated blood; also in traumatic swelling
Madhuśigru, ***Sū***. 38, 4; 46 300; ***Ci***. 16, 18, 22	Red variety of drumstick tree *Moringaptergospermum* Gaertn. (Red variety)	(a) Taken internally	(a) In migraine and internal abscesses; reduces obesity
		(b) Powdered leaves and bark used internally	(b) In internal abscesses .
		(c) Fruits taken internally	(c) For deranged *vāyu*; increases stool and urine
Mahāmedā, *Sū*. 38, 17	Probably large variety of *Litsaea sebitera* Pers. Syn.: *Erythrina indica* Lam.	Taken internally	Increases secretion of semen and breast-milk.
Mahanimba, *Sū*. 38, 17	*Melia azadirachta* Linn. Syn.: *M. sempervirens* Sw.	Fruits taken internally	In indigestion, colic pain and intestinal catarrh
Mahāśrāvanī, *Ci*. 30, 4	A variety of *Sphaeranthus indicus*	Extract in milk taken internally	Vitalizing and rejuvenating
Mahauṣadha, *Sū*. 37, 2; 46, 236; *Ci*. 19, 23 Syn.: *nāgara*	Dry ginger *Zingiber officinalis* Linn.	(a) As ingredient of a paste	(a) In swelling
		(b) The dried fruits taken as spice	(b) Aphrodisiac and appetizing; increases formation of semen
		(c) Preserved and cooked in milk; taken regularly in diet	(c) In elephantiasis

Name. references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Malapū, *Ci.* 8, 20; 9, 13. 18 Syn.: *kakodumvara*	Redwood fig tree *Ficus oppositifolia* Roxb. Syn.: *F. hispida* Linn.	(a) A decoction in hot water of roots as drink; as an ingredient of medicinal plaster	(a) In leucoderma
		(b) As an ingredient of a medicated oil	(b) For purifying, healing and imparting a natural colour to cicatrix formed after surgery; beneficial in fistula
Mālatī, *Sū.* 37, 22; 38, 31; 46, 305; *Ci.* 20, 15; *Utt.* 17, 25	Malabar nutmeg plant *Aganosma caryophyllata* G. Don. Syn.: *Echites caryophyllata* Roxb.	(a) As an ingredient of a medicated clarified butter	(a) For quick healing of wounds
		(b) Internally or externally	(b) In leprosy, malignant ulcers, and other virulent skin diseases
		(c) As an ingredient of a hair oil	(c) In baldness and alopecia
		(d) As an ingredient of eye-salve	(d) In loss of vision
		(e) Fruits taken internally	(e) In deranged *pitta*
Mallikā, *Sū.* 46, 305	*Jasminum samboc* Ait.	Flowers taken alone	Subdues deranged *pitta*
Māṃsī, *Sū.* 38, 12	Musk-root plant *Nardostachys jatamansi* DC. Syn.: *Valeriana jatamansi* Jones.	Taken internally	In skin eruptions and blood poisoning; anti-spasmodic
Maṇḍukaparṇī, *Sū.* 46, 273, 274; *Ci.* 28, 4	Indian pennywort *Hydrocotyle asiatica* Linn.	(a) Used as potherb	(a) In chronic skin diseases, fever, urinary disorders, hiccup and cough; astringent
		(b) Prolonged use of the juice with milk in daily diet	(b) For intellectual vigour and longevity.

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Mañjiṣṭhā, *Su.* 12. 19; 39. 7	Indian madder tree *Rubia cordifolia* Linn.	(a) Pasted with clarified butter and other drugs	(a) In major burns
	Syn.: *R. munjista* Roxb.	(b) Taken internally	(b) For the pacification of deranged *pitta*
Marica, *Sū.* 38. 11, 28; 44. 29; *Ci.* 20. 15; 22. 31; *Utt.* 17. 3	Black pepper plant *Piper nigrum* Linn.	(a) Taken internally (the dried fruits)	(a) In indigestion, colic pain, and intestinal catarrh In persistent skin diseases, urinary discharges, excessive fat, and abdominal tumours
		(b) Ingredient of paste	(b) For baldness and alopecia
		(c) Ingredient of eye-salve	(c) For eye diseases in aggravated *vāyu*
		(d) As in ingredient of drugs	(d) For purgation
		(e) Powder as ingredient of a paste	(e) For incidental ulcer due to operation of uvular swelling
Māṣa, *Sū.* 14. 28; 37. 10	Black gram *Phaseolus radiatus* Roxb. Syn.: *P. roxburghii* W.A.	(a) As an ingredient of medicated powder	(a) As styptic
		(b) Ingredient of paste	(b) For quick secretion and elimination of pus
Māṣaparṇī, *Sū.* 38. 17; *Ci.* 5. 18 Syn.: *mahāsahā*	*Teramnus labialis* Sprang. Syn.: *Glycine deblis* Roxb.	(a) Taken internally	(a) Increases secretion of semen and breast milk; spermatopoietic; curative of respiratory troubles, wasting diseases, and abdominal gland
		(b) Ingredient of plaster	(b) In acute rheumatic diseases

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Mātuluṅga, Sū. 37, 2; 46, 142, 150	The citron *Citrus medica* Linn.	(a) Ingredient of plaster	(a) Subdues swellings
		(b) Fruits taken internally	(b) In cough, asthma, lack of appetite, and thirst
		(c) Rind and the epidermic layer taken internally	(c) Subdues deranged *vāyu* and *pitta;* vermifuge
		(d) Cellular covering of the seeds taken internally	(d) Stomachic and astringent; cures piles, nausea, and abdominal gland
		(e) Juice taken internally	(e) In constipation, colic pain, indigestion
Medā, Sū. 38, 17	*Litsaea sebifera* Pers.	Taken internally	Increase secretion of semen and breast milk; spermatopoietic
Meṣaśṛṅgī, Sū. 38, 4, 6; 39, 5; *Ci.* 18, 37; *Utt.* 17, 21, 29	*Gymnema sylvestre* Roxb. Syn.: *Asclepias geminata* Roxb.	(a) Taken internally	(a) In migraine and internal abscesses; reduces obesity
			In urethral discharges, jaundice, and chronic skin diseases
		(b) Cooked with clarified butter and taken internally, also applied as an ointment	(b) In gradual loss of vision
		(c) Ingredient of eye-salve	(c) Cures corneal opacity
Mṛṇāla, Sū. 46, 328	The stem of any species of lotus plant	Taken raw internally	Cooling; cures haemoptysis

Name references; synonyms, if any	English Latin name	Mode of use	Medicinal uses
Mṛgādanī, *Ci*. 2, 65-66; 9, 11; 17, 21 Syn.: *indravāruṇī, jyotiṣka mṛgabhojanī*	*Citrullus colocynthis* Schrad. Syn.: *Cucumis colocynthis* Linn.	(a) Ingredient of medicated oil	(a) For the purification of virulent ulcers
		(b) Fruits as an ingredient of medicinal plaster	(b) In cutaneous skin diseases
Muculunda, *Ci*. 18, 5	*Peterospermum suberifolium*	Ingredient of plaster	In glandular swellings
Mudga, *Sū*. 46, 26-27, 402; *Utt*. 17, 30	Green gram *Phaseolus mungo* Linn.	(a) Cooked as lentil or as soup with other ingredients	(a) Wholesome and roborant food; curative of ulcers
		(b) Taken daily as a part of diet	(b) Maintains acute vision even in old age; retards loss of vision
Mūlaka, *Sū*. 37, 8; 46, 251-53 Syn.: *mūla*	Garden radish *Raphanus sativus* Linn.	(a) Fruits as an ingredient of paste	(a) Matures and supurates a non-suppurating boil
		(b) Taken after cooking in oil or butter	(b) Demulcent; subdues all deranged humours
		(c) Dried seeds as an ingredient of ointment	(c) In ringworm
		(d) Dried and used as potherb	(d) Invigorates eyesight; antitoxic
Muñjāta, *Ci*. 17, 7	Salep plant *Eulophia campestris* Wall. Syn.: *Saccharum munja*	Ingredient of thick ointment	In erysipelas and other extensive skin eruptions
Mūrvā, *Sū*. 12, 19; 38, 3, 11, 16; *Ci*. 2, 65-66; 3, 45 Syn.: *madhūlikā, madhurasā, tejovatī*	*Sansevieria roxburghiana* Schutt. Syn.: *S. zeylanica* Willd.	(a) Ingredient of ointment	(a) In major burns
		(b) Taken internally	(b) In poisoning, fevers, and urinary troubles

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
			Appetizer, febrifuge, and anti-toxic; beneficial in skin diseases, indigestion, colic pain, and intestinal catarrh
		(c) Ingredient of medicinal oil	(c) Ingredient of medicinal oil
		(d) Ingredient of scented oil for external and internal uses	(d) In fracture of bones, convulsion, hemiplegia, facial paralysis, and cephalagia
Muṣkaka, *Sū.* 38, 10	Mokha tree *Schrebera swietenioides* Roxb.	Taken internally	In obesity, seminal weakness, piles, jaundice, and urinary calculi
Mustā, *Sū.* 38, 13, 26; *Utt.* 10, 3; 17, 10 Syn.: *ambuda*, *gāṅgeya*, *mustaka*	Nut grass *Cyperus rotundus* Linn.	(a) Taken internally	(a) Purifies breast milk; cures dysentery
			In uterine and vaginal diseases and in indigestion
		(b) Boiled with goat's milk and other ingredients for preparation of washing fluid	(b) In night-blindness
		(c) Ingredient of eye-salve	(c) As prophylactic treatment for the eyes
Nādeyī, *Ci.* 4, 26	A species of *jambu* *Eugenia jambolana* Jam. Syn.: *Syzygium jambolanum* DC.	Ingredient of medicated salt	In various aggravations of *vāyu*, abdominal glands, dyspepsia, dysentery, piles, anorexia, cough, parasitic worms, and inordinate drinkings

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Nāgadanti, *Sū*. 38, 8; *Ci*. 8, 14	*Heliotropium indicum* Linn. Syn.: *Heliophytum indicum* DC.	(a) Taken internally or applied externally	(a) For parasitic worms and skin diseases
		(b) Ingredient of ointment	(b) For healing and filling up of anal fistula
Nāgapuṣpa, *Sū*. 38, 12, 13, 20, 22; *Ci*. 11, 8; 17, 15 Syn.: *ahipuṣpa*, *keśara*, *nāgakeśara*	*Mesua ferrea* Linn.	(a) Taken internally	(a) In skin eruptions and blood poisoning; anti-spasmodic
			For purifying breast milk; in chronic dysentery
			In toxic conditions, haemoptysis, and internal burning sensation of the body
			In persistent dysentery; promotes adhesion of fractured bones
		(b) Ingredient of medicated liquor	(b) As tonic
		(c) Ingredient of paste	(c) For ulcers and sinuses
Nala, *Sū*. 37, 3; 38, 5, 36	Nodding reed *Phramites karka* Trin. Syn.: *Arundoo karka* Retz.	(a) Roots as an ingredient of medicated paste	(a) Beneficial in inflammations and traumatic swellings
		(b) Taken internally	(b) In urinary diseases and calculi
		(c) Taken with cow's milk	(c) In haemoptysis
Nālikā, **Sū. 46, 288**	*Ipomoea aquatica* **Forsk.**	Cooked as potherb	Subdues deranged *pitta*

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Nāraṅga, *Sū*. 46, 163, 165 Syn.: *airāvata, nāgaraṅga*	Orange tree (loose-jacket) *Citrus aurantium* Linn.	Fruit juice and rind taken internally	Refreshing and appetizing; subdues deranged *vāta*
Narendra, *Ci*. 18, 4	Not identified	Decoction used as a wash	In glandular swellings
Nārikela, *Sū*. 46, 181, 184	Coconut tree *Cocos nucifera* Linn.	Pulp and water taken internally	Constructive tonic; subdues deranged *vāyu* and *pitta;* laxative, diuretic; prevents gastro-intestinal irritations
Nicula, *Sū*. 46, 192, 193; *Ci*. 19, 15	Hijal tree *Barringtonia acutangula* Gaertn.	(a) Fruits taken internally	(a) Healing, tonic and constructive; subdues all deranged humours
		(b) Ingredient of ointment	(b) For venereal sores
Nīli, *Ci*. 2, 65-66; 18, 26; 25, 18 Syn.: *añjanakī, nīlikā*	Indigo plant *Indigofera tinctoria* Linn.	(a) Ingredient of oil for local application	(a) In malignant ulcers
		(b) Powdered leaves as an ingredient of hair oil	(b) To restore natural colour of grey hairs
		(c) Ingredient of clarified butter for external and internal applications	(c) In tumour and in abdominal dropsy due to deranged *pitta*
Nimba, *Sū*. 37, 13; 38, 3, 31; 45, 101; 46, 204; *Ci*. 9, 9, 12 Syn.: *ariṣṭaphala, picumarda*	Margosa tree *Azadirachta indica* Juss. Syn.: *Melia azadirachta* Linn.	(a) Expressed oil as an ingredient of medicated oil	(a) Cleanses and sterilizes the interior of ulcers
		(b) Taken internally or used externally	(b) In poisoning, fevers, urinary troubles, and skin diseases In leprosy, malignant ulcers and other virulent skin diseases, and internal parasites

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Nimba (Contd.)		(c) Fruits taken internally	(c) In piles, internal tumours, leprosy, urinary discharges, and ascites
		(d) Ingredient of ointment	(d) In virulent forms of ringworm
		(e) Ingredient of medicated *ghṛta*	(e) In malignant skin diseases, chronic fever, haemorrhoids, oedema, jaundice, and erysipelas
Nirguṇḍī, *Sū*. 38, 9; 46, 304; *Utt*. 21, 40 Syn. : *sindhuvāra*	Chaste tree *Vitex negundo* Linn.	(a) Taken internally (flowers)	(a) In dyspepsia, catarrh, cough, and asthma
		(b) Juice mixed with honey as ear-drops	(b) In suppuration of the inner ears
Padma, *Sū*. 38, 22, 25 Syn. : *nalina*, *utpala*	Indian water-lily *Nelumbium speciosum* Linn.	(a) Tendrils taken internally	(a) In persistent dysentery and non-healing ulcers; promotes adhesion of fractured bones
			In blood poisoning, heart diseases and syncope
Padmaka, *Sū*. 38, 17, 19, 22	Wild cherry tree *Prunus puddum* Roxb. Syn.: *P. cerasoides* Don. *Cerasus puddum* wall	Taken internally (bark)	Increases secretion of breast milk and semen; spermatopoietic
			Cures haemoptysis and bilious fever. In persistent dysentery, ulcers, and for adhesion of fractured bones
Palala Udbhida, *Sū*. 46, 316	Mushroom (growing in hay stacks)	Taken as an article of diet	Subdues all deranged humours

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Palāṇḍu, *Sū.* 46, 256	Common onion *Allium cepa* Linn.	Article of diet	Appetizing; subdues deranged *vāyu*
Pālaṅkya, *Sū.* 46, 266, 271	Garden spinach *Spinacca olearacia* Linn.	Cooked as potherb	Diuretic, laxative, and antitoxic; cures drowsiness due to alcoholic stuper or vitiated blood
Palāśa, *Sū.* 11, 7; 38, 7, 22, 23; 46, 204-205 Syn. : *kiṃśuka*	Bengal kino tree *Butea frondosa* Roxb.	(a) Burnt for preparing alkalis	(a) For cautery
		(b) Taken internally	(b) Antitoxic, antiseptic, styptic, and astringent; in female disorders
			In obesity, seminal weakness, piles, jaundice, and urinary calculi
			In persistent dysentery and non-healing ulcers; promotes adhesion of fractured bones
			In leprosy, internal tumours, urinary discharges, piles, and abdominal glands
Pālindi, *Ci.* 17, 7	Not identified	Ingredient of medicinal plaster	In erysipelas
Pānasa, *Sū.* 46, 181	Jack-fruit tree *Artocarpus integrifolia* Linn.	Fruits taken internally	As constructive and tonic; subdues deranged *vāyu* and *pitta;* astringent
Pāribhadraka, *Sū.* 11, 7	*Erythrina indica* Lamk.	Burnt for preparing alkalis	For cautery
Parpaṭaka, *Sū.* 46, 273	*Oldenlandia herbacea* EDC Syn. : *O. biflora* Roxb.	Cooked as potherb	In fevers, chronic skin diseases, urinary diseases, cough and hiccup, and in haemoptysis

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Parūṣaka, Sū. 38. 21; 46. 177 Syn. : *parūṣa*	*Grewia asiatica* Linn.	(a) Taken internally	(a) Cordial, cooling, and appetizer
		(b) Fruits taken (ripe and unripe) internally	(b) Astringent; subdues deranged *vāya*, *pitta* and *kapha* (unripe fruits); cures haemoptysis.
Pāṭalā, Sū. 11, 7; 38. 3. 33; 39, 3	Trumpet flower tree *Stereospermum suaveolens* DC. Syn. : *Bignonia suaveolens* Roxb.	(a) Burnt for preparing alkalis	(a) For cautery
		(b) Taken internally or used externally	(b) In poisoning, fevers, and urinary troubles; antiseptic Appetizer; subdues deranged *vayu* and *pitta;* cures asthma and respiratory difficulties
		(c) Bark taken internally	(c) As purgative
Pāṭhā, Sū. 11. 28; 37. 12; 38, 3, 11. 15, 26	*Stephania hernandifolia* Walp. Syn. : *Cissampeles hernandifolia* Linn.	(a) Ingredient of plaster	(a) Aid to surgical bleeding
		(b) Decoction used as dressing for lints and plugs	(b) Cleansing and antiseptic
		(c) Taken internally	(c) In poisoning, fevers, and urinary troubles In indigestion, colic pain, and intestinal catarrh Loss of appetite and persistent nausea In vaginal discharges and other female diseases

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Paṭola, *Sū*. 38, 3, 16; *Utt*. 17, 31	Wild snake gourd or pulbul *Trichosanthus dioicia* Roxb.	(a) Taken internally and used externally	(a) In poisoning, fevers, and urinary diseases; antiseptic
			Appetizer, antitoxic, febrifuge; beneficial in skin diseases
		(b) Taken as part of daily diet	(b) Maintains acute vision
Patra, *Sū*. 38, 12	Cassia Cinnamon *Cinnamomum tamala* Fr. Nees	Taken internally	In skin eruptions and blood poisoning
Pattaṅga, *Sū*. 14, 29; 37, 18; *Ci*. 18, 32 Syn. : *raktacandana*	*Caesalpinia sappan* Linn.	(a) Ingredient of ointment	(a) As styptic
		(b) Ingredient of poultice for fomentation	(b) For carbuncles, boils, and quick healing of wounds
Pattūra, *Ci*. 7, 4	*Celosia argentea* Linn	Decoction boiled with clarified butter for internal use	In urinary calculi
Phalgu, *Utt*. 61, 20	Fig tree *Ficus carica* Linn.	Ingredient of medicated *ghṛta* for internal use	In epilepsy, fever, consumption, asthma, and insanity
Phaṇijjhaka, *Sū*. 38, 9	A variety of holy basil *Ocimum caryophyllatum* Roxb.	Taken internally	In dyspepsia, catarrh, cough and asthma; vermifuge
Pīlu, *Sū*. 45, 101; 46, 203	Toothbrush tree *Salvadora persica* Linn. Syn.: *S. indica* Wight.	(a) Fruits taken internally	(a) Heating and purgative
		(b) Oil of the seeds taken internally	(b) Laxative; beneficial in urinary diseases, head diseases, intestinal parasites, and in suppurating skin diseases

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Pippalī, *Sū*. 38, 11, 28, 29; 39, 2; *Śā*, 10, 15, 19; *Ci*. 9, 9, 18; 18, 36 Syn.: *māgadhī*, *upakulyā*	Long-pepper plant *Piper longum* Linn. Syn.: *Chavica roxburghii* Miq.	(a) Taken internally	(a) In indigestion, colic pain, intestinal catarrh In persistent skin diseases, urinary discharges, excessive fat, and abdominal tumours Aphrodisiac, general tonic, and febrifuge
		(b) Decoction of the fruits taken internally	(b) As emetic
		(c) Powdered and suspended in warm water	(c) In abnormal bleeding, and discharges after child-birth
		(d) Suspension in saline water taken internally	(d) In dry delivery
		(e) Pasted with cow's bile and shellac	(e) In leucoderma
		(f) Ingredient of medicated oil for internal use	(f) For goitre
		(g) Ingredient of medicated *ghṛta*	(g) In malignant skin diseases, chronic fever, haemorrhoids, oedema, jaundice, erysipelas, etc.
Piyāla, *Sū*. 38, 23; *Ci*. 18, 35 Syn.: *priyāla*	Buchanon's mango tree *Buchanania latifolia* Roxb.	(a) Taken internally	(a) In obesity, haemoptysis, menstrual disorders, and vaginal discharges; beneficial in the adhesion of fractured bones

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(b) Pith as an ingredient of plaster	(b) In goitre
Plakṣa, *Sū*. 12, 17; 38, 23	Yellow-bark fig tree *Ficus infectoria* Willd.	(a) Ingredient of ointment	(a) In major burns
		(b) Figs taken internally	(b) In obesity, haemoptysis, and vaginal discharges; beneficial in the adhesion of fractured bones
Prācībala, *Sū*. 38, 9	A variety of *Solanum nigrum* Linn.	Taken internally	In dyspepsia, catarrh, cough, and asthma; vermifuge
Prācīnāmalaka, *Sū*. 46, 159	Indian prune *Flacourtia cataphracta* Roxb.	Fruits taken internally	Antitoxic
Prapauṇḍarīka, *Sū*. 38, 17; *Ci*. 19, 15	The roots of *Nelumbium speciosum* Linn. (White variety)	(a) Roots taken internally	(a) Increases secretion of breast milk and semen
		(b) Ingredient of ointment	(b) In sores of venereal diseases
Priyaṅgu, *Sū*. 14, 29; 38, 12, 20, 22; *Ci*. 28, 21 Syn.: *gocandanā*, *priyaka*	Perfumed cherry *Aglaia roxburghiana* W.A.	(a) Pasted with mustard oil and common salt	(a) Styptic
		(b) Ingredient of medicated powder	(b) For quick healing of wounds
		(c) Taken internally	(c) In skin eruptions and blood poisoning
			In haemoptysis, toxic condition, and burning sensation of the body

Name, references; synonyms, if any	English Latin name	Mode of use	Medicinal uses
Pṛthakparṇī, Sū. 37, 22; 38, 2, 13, 32; *Ci.* 5, 6 Syn.: *kalaśī, pṛśniparṇī, śṛgālavinnā*	Pointed-leaved uraria *Uraria lagopoides* DC. Syn.: *Doodia lagopodioides* Roxb.	(a) Ingredient of medicated *ghṛta*	(a) For quick healing of wounds
		(b) Taken internally	(b) Beneficial in consumption, dysentery, respiratory troubles, and abdominal glands
		(c) Ingredient of potion	(c) Strengthening and roborant; cures asthma and fevers; increases breast milk
Pṛthvīka, Ci. 2, 65-66	A large variety of *Nigella indica* Roxb.	Ingredient of medicated oil	For the purification of malignant ulcer
Pūga, Sū. 39, 3; *Ci.* 17, 18 Syn.: *pūgī*	Betel-nut tree *Areca catechu* Linn.	(a) Fruits taken internally	(a) As purgative
		(b) Decoction as dressing for plugs	(b) In sinus formation
Punarnavā, Sū. 38, 29; *Ci.* 18, 35	Spreading pig-weed or hog-weed *Boerhavia repens* Linn. Syn.: *B. diffusa* Linn. *B. procumbens* Roxb.	(a) Taken internally	(a) In respiratory troubles, wasting diseases, and abdominal glands
		(b) Ingredient of medicinal paste	(b) In goitre
Puṇḍarīka, Sū. 38, 25	A type of water-lily *Nelumbium speciosum* Willd.	Taken internally	In blood poisoning, heart diseases, and syncope
Punnāga, Sū, 38, 12, 22; *Ci.* 11, 8 Syn.: *tuṅga*	*Ochrocarpus longifolius* Benth. & Hook.	(a) Taken internally	(a) In skin eruptions and blood poisoning

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
			In persistent dysentery and non-healing ulcers; promotes adhesion of fractured bones
		(b) Ingredient of medicated liquor	(b) As tonic
Pūtikā, *Sū.* 11, 7, 10; 37, 12; 38, 4, 6; 39, 2; 46, 266, 269 Syn.: *upodikā*	Malabar spinach *Basella rubra* Linn.	(a) Burnt for preparing caustic alkalis	(a) For cautery
		(b) Decoction used as dressing for lints and plugs	(b) Cleansing and antiseptic
		(c) Taken internally	(c) In migraine and internal abscesses; reduces obesity
			In urethral discharges, jaundice, and chronic skin diseases
		(d) Fruits taken internally	(d) A purgative
		(e) Cooked as potherb	(e) Laxative, diuretic, anti-narcotic, and tonic
Pūtikarañja, *Sū.* 46, 296; *Ci.* 19, 26	Fever-nut tree *Caesalpinia bonducella* Fleming. Syn.: *Guilandina bonducella* Linn.	(a) Juice of the fruits taken regularly	(a) In elepnantiasis
		(b) As potherb	(b) Heat-producing; cures swellings

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Rājadāna, *Sū*. 38, 21; 46, 166, 170	Indian ape-flower tree. *Mimusops hexandra* Roxb. Syn.: *M. indica* DC.	Fruits taken internally	Cordial, cooling, and appetizer
			In urinary diseases, and calculii in bladder
Rājakṣavaka, *Sū*. 46, 293	A variety of *Centipeda ordicularis* Lour. (Large leaved)	As potherb	Astringent and cooling
Raktotpala, *Sū*. 38, 25	Red water-lily *Nymphoea rubra* Roxb.	Taken internally	In blood poisoning, heart diseases, and syncope
Rasāñjana, *Sū*. 14, 29; *Ci*. 1, 86	Extract from wood of *Berberis asiatica* Roxb.	(a) Ingredient of powdered mixture	(a) In excessive bleeding
		(b) Ingredient of paste	(b) In obesity
			For restoring natural colour to a cicatrix, and inducing growth of hair in bald spots and alopecia
Rāsnā, *Sū*. 37, 2; 38, 8; *Ci*. 19, 15	Indian groundsel *Vanda roxburghii* Roxb. Syn.: *Cymbidium tessaloides* Roxb.	(a) Ingredient of medicinal paste	(a) Subdues swellings
		(b) Taken internally or applied externally	(b) For skin diseases and parasitic worms
		(c) Ingredient of medicinal plaster	(c) For venereal sores
Rasona, *Sū*. 46, 231, 255 Syn.: *laśuna*	Garlic plant *Allium sativum* Linn.	(a) Dried tubers taken internally	(a) Laxative, tonic, appetizing; improves sexual powers, voice, intellect, and complexion; helps

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
			adhesion of fractured bones; in heart diseases, fever, acute neuralgia, cough, asthma, and piles
Rohiṇī, *Sū*. 38, 23	Indian red-wood tree *Soymida febrifuga* A. Juss.	Fruits taken internally	In obesity, haemoptysis, menstrual disorders, and vaginal discharges
Rohiṣa, *Sū*. 46, 231, 244; *Utt*. 26, 8; 39, 95 Syn.: *bhūstṛṇa*, *bhūtika*	*Andropogan schoenanthus* Linn.	(a) Pasted along with other drugs for external use	(a) In head diseases
		(b) Decoction of the plant mixed with honey for internal uses	(b) In fever accompanied with bronchitis, cough, asthma, hiccup, constriction and swelling of throat, and pain in the chest; also beneficial in dyspepsia, catarrh, cough and asthma
		(c) As potherb taken in diet	(c) Heat-producing; subdues *vāyu*
Ṛṣabhaka, *Sū*. 38, 2, 17	Not identified	Taken internally or applied externally	In respiratory troubles, wasting diseases, abdominal swelling; increases breast milk; spermatopoietic
Sahacara, *Sū*. 38, 5; *Ci*. 25, 8	*Barleria cristata* Linn.	(a) Taken internally	(a) In urinary diseases and calculi
		(b) Ingredient of hair oil	(b) For arresting greying of hair
Sahadevā, *Ci*. 5, 18	A variety of *Sida cordifolia* Linn.	Ingredient of plaster	In acute rhuematism
Śailabheda, *Utt*. 10, 3	Indian rock-foil plant *Saxifrega ligulata* Wall	Boiled with goat's milk and other drugs and used as washing fluid	Prophylactic treatment for the eyes

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Saireyaka, *Sū*. 38, 4, 35 Syn.: *saireya*	Yellow nail-dye plant *Barleria prionitis* Linn.	Taken internally (flowers)	In haemoptysis, oedema, urethral discharges, seminal disorders, migraine, and internal abscesses; reduces obesity
Śaivāla, *Ci*. 5, 11; *Utt*. 10, 3	Moss (common) *Vallisneria spirallis* Linn.	(a) Ingredient of plaster	(a) In wasting and atrophy of the leg muscles
		(b) Boiled with goat's milk and other ingredients for use as washing fluid	(b) As prophylactic treatment for eyes
Śāla, *Sū*. 14, 29; 37, 17, 18; 38, 6, 7, 12	*Sal* tree *Shorea robusta* Gaertn.	(a) Wood burnt for alkali	(a) Astringent and styptic
		(b) Ingredient of mixture for fumigation	(b) For healing up of wounds
		(c) Taken internally	(c) Antiseptic, antitoxic; in female disorders, obesity, urethral discharges, and jaundice
		(d) Sap as an ingredient of condensed extract	(d) For purification of ulcers
Sālidhānya, *Sū*. 12, 18; *Utt*. 10, 3	Rice of the *śāli* variety *Oryza sativa* Linn.	(a) Pulverized grains pasted with other ingredients	(a) For major burns
		(b) Boiled with goat's milk or clarified butter and other ingredients and used as washing fluid	(b) For prophylactic treatment of the eyes

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Śallakī, *Sū*. 38, 7, 23; *Utt*. 10, 4	Indian olibanum *Boswellia serrata* Colebr.	(a) Taken internally	(a) Antitoxic, antiseptic, astringent, and styptic; in female disorders In obesity and haemoptysis
		(b) Juice as an ingredient of eye-salve	(b) In all types of eye diseases caused by the derangement of *pitta*
Śālmalī, *Sū*. 14, 29; 37, 10	Red silk-cotton tree *Bombax malabaricum* DC. Syn.: *B. heptaphylla* Cav.	(a) Flowers pasted with mustard oil and common salt	(a) Causes quick secretion and elimination of *pitta*
		(b) Roots and barks made into paste	(b) Styptic
Samaṅgā, *Sū*. 37, 21; 38, 22	Sensitive plant *Mimosa pudica* Linn.	(a) Ingredient of ointment	(a) Quick healing of wounds
		(b) Taken internally	(b) In persistent dysentery; promotes adhesion of fractured bones
Śamī, *Sū*. 46, 199	*Prosopis spicigera* Linn. Syn.: *Acacia suma* Ham; *Mimosa suma* Roxb.	Fruits taken internally	Dries up excessive mucus or fluid formation; has a depilatory action
Śaṇa, *Sū*. 37, 8	Bengal hemp plant *Crotalaria juncea* Linn.	Flowers pasted with other ingredients	Matures and suppurates a non-suppurating swelling
Śaṇapuṣpī, *Sū*. 39, 2	*Crotalaria verrucosa* Linn.	Roots taken internally	As emetic
Śaṅkhinī, *Sū*. 37, 11; 38, 14; 39, 3	*Ctenolepis cerasiformis* H. & K.	(a) Decoction for washing a wound	(a) Cleansing and antiseptic
		(b) Taken internally	(b) For acute constipation, intestinal paralysis, and abdominal swelling
		(c) Roots taken internally	(c) As purgative

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Saptaparṇa, *Sū*. 38, 3, 31; 39, 3; *Ci*. 8, 20 Syn.: *saptacchada*	Dita plant *Alstonia scholaris* Roxb. Syn.: *Echites scholaris* Roxb.	(a) Taken internally or used externally	(a) In poisoning, fever, and urinary troubles; antiseptic In leprosy, malignant ulcers and other virulent skin diseases
		(b) A suspension of the milky exudate taken	(b) As purgative
		(c) Ingredient of ointment	(c) For healing, hardening and imparting a natural colour to cicatrix formed after surgery. In serious type of anal fistula
Saptalā, *Sū*. 38, 14; 39, 2	*Acaia concinna* DC.	(a) Taken internally	(a) In acute constipation, intestinal paralysis, and derangement of spleen
		(b) Roots taken internally	(b) As purgative
Sarala, *Sū*. 37, 5, 16; 38, 12; *Ci*. 5, 8; 17, 7; 19, 15 Syn.: *śrīveṣṭaka*	Himalayan pine tree *Pinus longifolia* Roxb.	(a) Ingredient of a mixture for fumigation	(a) For quick healing of wounds
		(b) Ingredient of plaster	(b) In wasting of muscles of the lower extremities and in infantile paralysis.
		(c) Ingredient of ointment	(c) In herpes and other extensive eruptions. In venereal sores
		(d) Ingredient of paste	(d) Subdues swellings
		(e) Gum used for fumigation	(e) To induce healing of wounds
		(f) Taken internally	(f) In skin eruptions and blood poisoning

Name, references; synonyms, if any	English-/Latin name	Mode of use	Medicinal uses
Sārivā, *Sū.* 11, 7; 16, 17; 37, 6; 38, 2, 14, 17, 19, 35; *Utt.* 51, 21 Syn.: *anantamūla*, *āsphota*, *gopavallī*, *śyāmā*	Indian sarsaparila *Hemidesmus indicus* Br. Syn.: *Ichnocarpus frutescens* Roxb; *Echites frutescens* Roxb.	(a) Taken internally or applied externally	(a) In consumption, abdominal swelling, aching of limbs, asthma and cough
		(b) Ingredient of paste	(b) Subdues swellings
		(c) Taken internally with milk	(c) In asthma and cough
		(d) As alkaline ash	(d) For cautery
		(e) Fruits with clarified butter for internal use	(e) In haemoptysis and urinary diseases
		(f) Thick aqueous extract as an ingredient of massage cream	(f) For promoting growth of normal healthy tissues after surgery
Śārṅgaṣṭā, *Sū.* 38, 3, 26	Indian mulberry tree *Morinda citrifolia* Linn.	Taken internally or used externally	(a) In poisoning, fevers, and urinary diseases; antiseptic In indigestion, loss of breast milk, vaginal discharges and other female diseases
Sarṣapa, *Sū.* 37, 8; 38, 11; 39, 2; *Śā.* 10, 18; *Ci.* 9, 12, 19	Mustard plant *Brassica sarson* Linn.	(a) Seeds pasted with other ingredients	(a) Matures and suppurates a non-suppurating boil
		(b) Taken internally	(b) In indigestion, colic pain, and intestinal catarrh
		(c) Decoction of the seeds taken internally	(c) As emetic
		(d) Seeds burnt for local fumigation	(d) In retention of the placenta

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(e) Seeds as an ingredient of ointment	(e) In ringworm
		(f) Ingredient of plaster	(f) In leucoderma
Ṣaṣṭika Dhānya, Utt. 40, 53	A variety of fine rice ripening in sixty days *Oryza sativum* Linn.	Taken as diet	Cures chronic dysentery
Śatapuṣpā, Ci. 5, 8, 19 Syn.: *śatāhva*	*Peaucedanum graveolens* Benth.	Ingredient of plaster	For poulticing in acute rheumatism
Śatāvarī, Sū. 16, 18; 38, 2, 4, 35; *Ci.* 7, 4; *Utt.* 17, 31; 39, 117 Syn.: *abhīru, śatamūlī, varī*	Indian asparagus *Asparagus racemosus* Willd.	(a) Ingredient of medicated oil	(a) For promoting growth or elongation of local flesh
		(b) Taken internally	(b) Beneficial in consumption, respiratory troubles, and in abdominal swelling
			In migraine and internal abscesses; reduces obesity
			In haemoptysis, oedema, urethral discharges, and seminal disorders
		(c) Taken daily as a part of diet	(c) Maintains acute vision
		(d) Decoction boiled with clarified butter for internal use	(d) In urinary calculi
		(e) Ingredient of medicated *ghṛta*	(e) In scrofula, severe skin diseases, fever, eye diseases, ulcers, and diseases of mouth, ear, and nose

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Satīna, Sū. 46, 273, 278	Garden-pea lentil *Pisum sativum* Linn.	As potherb	In fevers, chronic skin diseases, urinary troubles, hiccup, and cough
Sāvararodhra, Sū. 38, 7, 22	A variety of the lodh plant *Symplocos racemosa* Linn.	Taken internally	Antitoxic, antiseptic, astringent, and styptic; in female diseases
			In persistent dysentery and non-healing ulcers; promotes adhesion of fractured bones
Śigru, Sū. 37, 8; 38, 4; *Ci.* 14, 9, 17; *Utt.* 17, 31 Syn.: *muraṅgī, śobhāñjana*	Drumstick plant *Moringa pterygospermum* Gaertn. Syn.: *Hyperanthera moringo* Willd.	(a) Fruits pasted with other fruits for external use	(a) Matures and suppurates a non-suppurating boil
		(b) Taken internally	(b) In migraine and abdominal swelling; reduces obesity
		(c) Used regularly in diet	(c) Invigorates eyesight
		(d) Ingredient of medicated paste for internal use	(d) In dropsy
		(e) Decoction used with other drugs and rock-salt for external use	(e) In dropsical swelling
Śiṃśapā, Sū. 38, 6, 10	Rose-wood tree *Dalbergia sissoo* Roxb.	Taken internally or used externally	In obesity, urethral discharges, jaundice, chronic skin diseases, seminal weakness, piles, and urinary calculi
Śirīṣa, Sū. 37, 28; 38, 6; *Ci.* 9, 12; *Utt.* 12, 20	Siris tree *Albizzia lebbeck* Benth. Syn.: *Mimosa sirissa* Roxb.	(a) Seeds as an ingredient of dusting powder	(a) For destroying the fleshy supergrowth of an ulcer
		(b) Taken internally or applied externally	(b) In obesity, urethral discharges, jaundice, and chronic skin diseases

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(c) Ingredient of ointment	(c) In virulent forms of ringworm
		(d) Seeds as an ingredient of eye-salve	(d) In gradual growth of a milky layer over the eyes
Sitā, Sū. 37, 22	*Saccharum officinarum* Linn. (White variety)	Flowers as an ingredient of medicated *ghṛta*	For quick healing of wounds
Sītaśiva, Ci. 17, 7	Dill seeds *Peucedanum sowa* Bth & Hf.	Ingredient of medicinal plaster	In erysipelas
Sivaṭī, Utt. 23, 37	*Boerhavia diffusa* Linn. (White variety)	Ingredient of errhine	In nasal diseases
Śleṣmātaka, Sū. 46, 166-67, 200 Syn.: *sītaphala*	Assyrian plum tree *Cordia myxa* Roxb.	Fruits taken internally	Cooling and astringent; subdues *kapha* and *pitta*
Snuhī, Sū. 11, 7; 37, 14; 38, 10. 14; 44, 2; *Ci.* 8, 20; *Utt.* 21, 16 Syn.: *mahāvṛkṣa, sudhā, snuk, vajravṛkṣa*	Thorny milk-hedge *Euphorbia neriifolia* Linn. Syn.: *E. ligularia* Roxb.	(a) Burnt for making alkalis	(a) For cautery
		(b) Milky juice as an ingredient of medicated *ghṛta*	(b) For cleansing and sterilizing the interior of ulcers; in dressing wounds
		(c) Taken internally	(c) In acute constipation, intestinal paralysis, obesity, seminal weakness, piles, jaundice, abdominal glands, abdominal dropsy, and urinary calculi
		(d) Milky juice taken with water	(d) As a powerful purgative
		(e) Ingredient of medicated oil	(e) To purify, and impart a natural colour to cicatrix formed after surgery. Beneficial in anal fistula

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(e) Ingredient of medicinal oil for application to ears	(f) For ear-ache
Soma, Sū. 37, 20; *Ci.* 29	*Sarcostemma brevistigma* Wight & Arn.	(a) Taken daily along with observance of special regimen of diet, with regular sleep, proper conduct, and mental discipline	(a) For complete rejuvenation
		(b) Ingredient of medicated plugs for insertion	(b) Quick healing of wounds
Spṛkkā, Sū. 38, 12	Melilot plant	Taken internally	In skin eruptions and blood poisoning
	Melilotus officinalis Juss.		
	Syn.: *Trigonella corniculata* Linn.		
Srāvaṇī, Ci. 30, 4	*Sphaeranthus indicus* Linn.	Extract in milk along with observance of special regimen of diet, with regular sleep, proper conduct, and self discipline	A potent and general remedy for many diseases

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Sṛṅgāṭaka, *Sū*. 46, 328, 333	Water-chestnut *Trapa bispinosa* Roxb.	Bulb taken as diet	Cooling and stool-forming
Sṛṅgavera, *Sū*. 38, 11, 28; *Śā*. 10, 15; *Ci*. 14, 9; 19, 23 Syn.: *ārdrā*, *ārdraka*, *śuṇṭhī*	Ginger plant *Zingiber officinalis* Linn.	(a) Taken internally	(a) In indigestion, colic pain, intestinal catarrh, and abdominal glands In chronic skin diseases, urinary discharges, and excessive fat
		(b) Powdered and suspended in warm water (taken internally)	(b) For abnormal bleeding after child birth
		(c) Ingredient of medicinal plaster	(c) In elephantiasis
		(d) Juice taken with other substances	(d) In colic pain
Sthauṇeyaka, *Sū*. 38, 12	Glory tree *Clerodendron infortunatum* Linn.	Taken internally	In skin eruptions and blood poisoning
Sthūlakanda, *Sū*. 46, 337, 339	*Alium sativum* Linn. (Red variety)	Bulb cooked as diet	Produces adequate heat in the body
Sugandhaka, *Sū*. 38, 9	Small fennel plant *Nigella sativa* Linn.	Taken internally	In dyspepsia, catarrh, cough, and asthma; vermifuge and aseptic

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Sukākhya, Ci. 2, 65-66	*Mimosa abstergens* Linn.	Ingredient of oil for local application	In malignant ulcers
Sukarasā, Ci. 17, 21	*Orylum indicum* Vent.	Ingredient of medicinal paste	In sinus formation
Sumukha, Sū. 38, 9	Shrubby basil (variety) *Ocimum pilosum* Linn.	Taken internally	(a) In dyspepsia, catarrh, cough, and asthma
Sunisaṇṇaka, Sū. 46, 273, 276; *Ut.* 17, 31	*Marsilea quadrifolia* Linn.	(a) Cooked as potherb	(a) Subdues three deranged humours and arrests the evacuation of bowel
		(b) Used regularly as diet	(b) Invigorates eyesight
Sūraṇa, Sū. 46, 338, 339	*Amorphophallus campanulatus* Blume. Syn.: *Arum campanulatum* Roxb.	Bulb as an article of diet	Cures piles, rectal polyp formations, and condylomata
Surasī, Sū. 38, 9	Holy basil plant (a variety) A variety of *Ocimum sanctum* Linn.	Taken internally	In dyspepsia, catarrh, cough, asthma, and skin diseases
Suvahā, Ci. 2, 65-66	*Cissus pedata* Lamk.	Ingredient of medicated oil or paste	For cleansing of ulcers

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Śvadaṃṣṭrā, Sū. 38, 2, 5	*Tribulus terristris* Linn. Syn.: *T. lanuginosus* Linn.	Taken internally	Beneficial in consumption, respiratory troubles, and abdominal swelling
			In urinary diseases and calculi
Śvetā, Sū. 39, 2	Not identified	Roots taken internally	As emetic
Śyāmāka, Sū. 15, 32	*Panicum frumenticeum* Roxb.	Ingredient of internal medicine	Reduces obesity by cleansing internal channels of the body
Śyonāka,, Sū. 38, 7, 22; *Ci.* 20, 15; 22, 43; *Utt.* 40, 44, 56 Syn.: *dīrghavṛnta, kaṭvaṅga, kuṭannata, ṭuṇṭuka*	*Colosanthes indica* Bl. Syn.: *Bignonia indica* Linn.	(a) Ingredient of medicated *ghṛta*	(a) In chronic dysentery
		(b) Leaves used as paste for fumigation	(b) In all types of affection of the mouth
		(c) Taken internally	(c) Antiseptic, antitoxic, astringent and styptic; in female disorders, persistent dysentery, and non-healing ulcers; promotes adhesion of fractured bone
		(d) Thin plaster applied locally	(d) In falling of hair and baldness

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Tagara, Sū: 14, 28; 38, 12	*Tabernoemontana coronaria* Br.	(a) Ingredient of plaster	(a) Aid to surgical bleeding
		(b) Taken internally	(b) In skin eruptions and blood poisoning
Tāla, Sū. 37, 20; 38, 6; 46, 181-83	Indian sugar-palm tree *Borassus flabeliformis* Linn.	(a) Dried leaves as an ingredient of dusting powder	(a) For quick healing of wounds
		(b) Taken internally or applied externally	(b) In obesity, urethral discharges, jaundice, and chronic skin diseases
		(c) Fruits taken internally	(c) As tonic; subdues deranged *vāyu* and *pitta;* diuretic
Tālapatrī, Sū. 11, 10; *Ci.* 18, 4	*Curculigo orchoides* Gaertn.	(a) Dry and fine powder added to caustic alkali	(a) In cauterization
		(b) Ingredient of plaster	(b) In glandular swellings
Tāmbūla, Sū. 46, 297	Betel-leaf plant *Piper betle* Linn. Syn.: *Chavica betle* Miq.	Taken raw internally	Beneficial to the voice; removes excessive secretion of fluids
Taṇḍulīyaka, Sū. 46, 266; *Utt.* 17, 31 Syn.: *taṇḍulīya*	Prickly amaranth *Amoranthus polygamus* Willd.	(a) Cooked as potherb	(a) Diuretic, laxative, and antitoxic; cures drowsiness due to poison, alcoholism or vitiated blood
		(b) Used regularly in the diet	(b) Invigorates the cyesight
Ṭaṅka, Sū. 46, 197	Pear tree *Pyrus communis* Linn.	Fruits taken internally	Cooling and astringent
Tarkārī, Sū. 38, 4; *Utt.* 37, 31	Coxwomb tree *Celosia argentea* Linn.	(a) Taken internally	(a) In migraine and internal abscesses; reduces obesity
		(b) Used regularly as diet	(b) Invigorates eyesight

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Taruṇī, Sū. 46, 259	Cabbage rose plant *Rosa centifolia* Linn.	Cooked as potherb	Astringent, digestive: cures haemoptysis
Tila, Sū. 11, 13; 16, 16; 37, 14	Sesame plant *Sesamum indicum* Linn. Syn.: *S. orientale* Linn.	(a) Ingredient of ointment (b) Ingredient of medicated oil	(a) For healing up of burns due to the action of alkali For promoting growth of healthy tissues after surgery (b) For maturing and suppurating a non-suppurating boil
Tindukī, Sū. 12, 18; 38, 23; 46 172	False mangosteen *Diospyros embryopteris* Pers. Syn.: *D. glutinosa* Koenig.	(a) Pulverized bark as an ingredient of plaster (b) Taken internally (c) Ripe fruits taken internally	(a) In major burns and bilious erysipelas (b) In haemoptysis, and excessive menstrual and other vaginal discharges (c) Subdues *kapha* and *pitta*
Tiniśa, Sū. 38, 6; 45, 106 Syn.: *atimuktaka*	Chariot tree *Ougeinia dalbergioides* Benth. Syn.: *Dalbergia oojeinensis* Roxb.	(a) Taken internally or used externally (b) Oil of the seeds taken internally	(a) In obesity, urethral discharges, jaundice, and chronic skin diseases (b) Potent and digestive; pacifies *vāyu* and *pitta;* increases slimy secretion of the body
Tintiḍīka, Sū. 46, 142, 160	Tamarind tree *Tamarindus indica* Linn.	Ripe fruits taken internally	Astringent, stomachic, and appetizer; subdues deranged *vāyu* and *kapha*
Todana, Sū. 46, 156	A variety of *Allium cepa* Linn.	Taken internally	Cooling and astringent; subdues *pitta* and *kapha*
Trapuṣa, Sū. 46, 223, 228	Cucumber plant *Cucumis sativus* Linn.	Fruits taken internally	Diuretic, stomachic, and laxative; subdues *pitta*
Trāyamāṇā, Sū. 38, 31	Zalil plant *Delphinium zalil* Aitch.	Taken internally	In leprosy, malignant ulcers and other virulent skin diseases; vermifuge

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Trikaṇṭaka, *Sū*. 38, 32, 35 Syn.: *gokṣura*	*Tribulus terrestris* Linn.	Taken internally	Strengthening and roborant
			In haemoptysis, oedema, urethral discharges, and seminal disorders
Tṛṇaśūnyā, *Sū*. 38, 17; 46, 201 Syn.: *chinnaruhā*	Screw pine *Pandanus odoratissimus* Willd	Fruits taken internally	Heating; subdues *vāyu* and *kapha*
			For increasing secretion of semen and breast milk; in menstrual and uterine disorders
Trvṛt, *Sū*. 38, 14; 39, 3; *Ci*. 2, 65-67; 8, 12; 17, 13 Syn.: *tribhaṇḍī*	Turpeth plant *Ipomaea turpethum* Roxb. Syn.: *Convolvulus turpethum* Linn.	(a) Taken internally	(a) For acute constipation, intestinal paralysis, and abdominal swelling
		(b) Roots taken internally	(b) As purgative
		(c) Ingredient of ointment	(c) In healing and filling up of fistulas
		(d) Ingredient of medicated oil	(d) For cleansing of ulcers
		(e) Ingredient of paste	(e) For malignant ulcers
		(f) Ingredient of medicated *ghṛta*	(f) For lubrication of sinus after operation
Tugākṣīrī, *Sū*. 12, 17; 38, 17; *Utt*. 41, 30 Syn.: *vaṃśalocana*	A portion of the bamboo plant (bamboo manna)	(a) Ingredient of paste with clarified butter	(a) For major burns

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(b) Taken internally	(b) Increases secretion of breast milk and semen; spermatopoietic
		(c) Ingredient of medicinal *ghṛta*	(c) A multipurpose tonic for genera. health, rejuvenation, and curing of many diseases
***Tumburu*, *Ci*. 5, 30**	*Zanthoxylum alatum* Linn. Syn.: *Z. hostile* Wall.	Ingredient of potion	In hysterical convulsion and epileptic fits
***Turuṣka*, *Sū*. 38, 12**	Storax plant *Altingia excelsa* Noronha Syn.: *Liquidamber altingia* Bl.	Taken internally	In skin eruptions and blood poisoning
***Tuvaraka*, *Ci*. 13, 7-10**	Cadjan pea *Cajanus indicus* Spreng.	Expressed oil of the ripe fruits taken internally	For diabetes and urinary diseases, leprosy and all other malignant skin diseases
Tvak*, *Sū*. 37, 25; 38, 12; *Ci*. 17, 7** Syn.: ***coca	True cinnamon *Cinnamomum zeylanicum* Breyn.	(a) Dried bark as an ingredient of dusting powder	(a) For quick healing of wounds
		(b) Taken internally	(b) In skin eruptions and blood poisoning; antispasmodic
		(c) Ingredient of medicinal plaster	(c) In erysipelas
***Uddālaka*, *Sū*. 15, 32**	Indian chowlee *Vigna catiang* Endl.	Used in internal prescriptions	Reduces obsity by cleansing the internal channels

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Uḍumbara*, *Sū*. 37, 20; 38, 23; *Ci*. 9, 12** Syn.: ***audumbara*, *bhadrā	Common fig tree *Ficus glomerata* Linn. Syn.: *Covellia glomerata* Miq.	(a) Ingredient of plug-stick	(a) For quick healing up of wounds
		(b) Fruits taken internally	(b) In obesity, haemoptysis, and vaginal discharges
		(c) Decoction in hot water for washing purpose	(c) In leucoderma
***Undurakarṇika*, *Sū*. 38, 9**	*Ipomaea reniformis* Chois.	Taken internally	In dyspepsia, catarrh, cough, and asthma
***Uruvaka*, *Sū*. 46, 264**	White variety of the castor-seed plant *Ricinus communis* Linn. (White variety)	Leaves cooked as potherb	Heating; subdues deranged *vāyu*
Uśīra*, *Sū*. 38, 12, 19** Syn.: ***naladā	Cuscus grass *Andropogan muricatum* Retz.	Taken internally	In skin eruptions and blood poisoning
			Cures bilious fever, haemoptysis, and poisoning
***Utkaṭa*, *Ci*. 7, 4**	*Saccharum sara* Roxb.	Decoction boiled with clarified butter for internal use	In urinary calculi
***Uttamā*, *Sū*. 37, 14**	Indian birthwort *Aristolochia indica* Linn.	Ingredient of medicinal *ghṛta*	For cleansing and sterilizing the interior of an ulcer
Vacā*, *Sū*. 11, 10; 37, 16; 38, 11, 13, 26; 39, 2; *Ci*. 9, 9; 28, 7-8; *Utt*. 61, 20** Syn.: ***ṣaḍgranthā*, *ugrā	Sweet-flag plant *Acorus calamus* Linn.	(a) As dry powder	(a) For preparing caustic alkalis for cauterization
		(b) Ingredient of medicated powder	(b) For cleansing and sterilizing wounds

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(c) Taken internally	(c) In indigestion, colic pain, and intestinal catarrh; purifies breast milk, and cures dysentery In vaginal discharges and female diseases
		(d) Roots taken internally	(d) As emetic
		(e) Juice with milk as a part of daily diet	(e) For intellectual vigour and longevity
		(f) Ingredient of medicated *ghṛta* for internal use	(f) In epilepsy, consumption, asthma, insanity, haemorrhage, heart disease, pastular eruptions, menorrhagia, impotency, etc
		(g) Cooked with clarified butter for internal use	(g) In scrofula, goitre, elephantiasis, and hoarseness
Vākucī, *Sū*. 46, 277; *Ci*. 9, 20 Syn.: *avalguja*	The purple flea-bane *Vernonia anthelmintica* Willd.	(a) Ingredient of medicated *ghṛta*	(a) In malignant skin diseases
		(b) As a potherb	(b) For subduing deranged *pitta* and *kapha*
Vārtāku, *Sū*. 46, 273, 282; *Utt*. 17, 31 Syn.: *vartaka*	Brinjal plant *Śolanum melongena* Linn.	Cooked as vegetable	Invigorates eyesight; subdues *vāyu* and *kapha*
Varuṇa, *Sū*. 38, 4; 46, 192-93 Syn.: *urumāna*	Sacred caper tree *Crataeva religiosa* Forst. Syn.: *Capparis trifoliata* Roxb.	Fruits taken internally	Reduces obesity; in migraine and internal abscesses Demulcent, heating, and tonic

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Vāsaka, *Sū*. 11, 6; 46, 273-74; 280, 284-85 Syn.: *āṭaruṣaka*, *vāsā*	Malabar nut tree *Adhatoda vasica* Nees. Syn.: *Justicia adhatoda* Roxb.	(a) Burnt for preparing alkalis	(a) In cautery
		(b) Flowers taken raw or cooked	(b) In wasting diseases, cough, and pulmonary diseases
		(c) Decoction of the roots taken regularly	(c) For longevity
		(d) As cooked potherb	(d) In haemoptysis, skin diseases, urinary diseases, fever dyspepsia, cough, deranged *kapha* and *pitta* and anorexia
Vasira, *Sū*. 38, 4, 5; 46, 195	*Cleome viscosa* Linn.	Fruits taken internally	In migraine and internal abscesses; reduces obesity
			In urinary diseases and calculi; cures haemoptysis
Vāstuka, *Sū*. 46, 266; *Utt*. 17, 31	White groose-foot plant *Chenopodium album* Linn.	(a) Cooked as potherb	(a) Diuretic and laxative; improves intellect and digestion; cures intestinal worms
		(b) Used regularly in diet	(b) Invigorates eyesight
Vāsuka, *Sū*. 38, 4, 5	*Sesbania grandiflora* Pers.	Taken internally	In migraine and internal abscesses; reduces obesity
			In urinary diseases and calculi
Vaṭa, *Sū*. 37, 18, 23 Syn.: *nyagrodha*	Banyan tree *Ficus bengalensis* Linn. Syn.: *F. indica* Roxb.	(a) Cold infusion of the figs as a washing liquid	(a) For quick healing of wounds by cooling and astringent action
		(b) Taken internally (the figs)	(b) In obesity, haemoptysis, and vaginal discharge
Vaṭaśuṅgā, *Sū*. 2, 32	A variety of *Coleus ambo*	Taken internally in combination with other substances	Promoting child-birth

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Vātāma, *Sū*. 46, 192	Indian almond tree *Terminalia catappa* Linn.	Fruits taken internally	Heating, constructive, and tonic; subdues all deranged humours
Vega, *Sū*. 46, 231, 247 Syn.: *avaguttha*	*Trichosanthes palmata* Roxb.	As potherb in diet	Heating and sharp; suppresses discharge of urine and stool
Vetasa, *Sū*. 38, 23; 46, 192; *Ci*. 19, 15-16 Syn.: *nicula*, *vañjula*	Rattan cane *Calamus rotang* Linn. Syn.: *C. roxburghii* Griff.	(a) Ingredient of ointment	(a) For venereal sores
		(b) Taken internally or applied externally	(b) In obesity, haemoptysis, menstrual disorders and other vaginal discharges; promotes adhesion of fractured bone
		(c) Fruits taken internally	(c) Demulcent, heat-making, constructive, and tonic; subdues *vāyu*, *pitta* and *kapha*
Vibhītaka, *Sū*. 11, 7; 38, 26, 27; 39, 3; *Ci*. 17, 19; 25, 19 Syn.: *akṣa*	Belleric myrobalan *Terminalia belerica* Roxb.	(a) Burnt for preparing alkalis	(a) In cautery
		(b) Taken internally	(b) In indigestion, loss of breast milk, and female diseases
			In chronic skin diseases, urinary diseases, irregular fever, and gradual loss of vision
		(c) Fruits taken internally	(c) As purgative
		(d) Powdered stones as an ingredient of medicated oil	(d) In sinus formation

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
		(e) Ingredient of hair tonic	(e) To prevent premature baldness and greying of hair
Viḍaṅga, *Sū*. 11, 10; 14, 28; 37, 12; 38, 9, 11; 39, 2; *Utt*. 61, 20 Syn.: *kṛmiśatru, viḍa*	Embelia plant *Embelia ribes* Burm. f. Syn.: *E. glandulifera* Wight.	(a) As dry powder	(a) For preparing caustic alkalis for cauterization
		(b) Ingredient of a composition for external use	(b) Aid to surgical bleeding
		(c) Ingredient of a plug-stick	(c) For cleansing and as antiseptic
		(d) Taken internally	(d) For dyspepsia, catarrh, cough, asthma, colic pain, abdominal swelling, and gastralgia
		(e) Fruits taken internally	(e) As emetic
		(f) Incredient of medicated *ghṛta* for internal use	(f) In epilepsy, fever, consumption, asthma, and insanity
Vidārī, *Sū*. 38, 2, 35; 46, 328, 330 Syn.: *vidārikanda*	*Batatas paniculata* Linn. Syn.: *Convolvulus paniculatus* Linn.	(a) Taken internally	(a) Beneficial in consumption, respiratory troubles, abdominal gland, and aching of limbs In haemoptysis, oedema, urethral discharges, and seminal disorders
		(b) Bulb cooked as vegetable	(b) Tonic and cooling; improves voice

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Vidārigandhā, Su. 16, 17; 38, 2, 12, 32 Syn.: *dīrghamūla, śālaparṇī, sthirā*	Tick trefoil plant *Desmodium gangeticum* Burm. Syn.: *Hedysarum gangeticum* Linn.	(a) Ingredient of massage oil	(a) For growth of normal healthy tissues after surgery
		(b) Taken internally	(b) In wasting diseases, respiratory diseases, and abdominal swelling In persistent dysentery and non-healing ulcers; promotes adhesion of fractured bone Strengthening and roborant
		(c) Ingredient of medicated *ghṛta*	(c) In erysipelas, sinus, boils, head diseases, and inflammatory affections of mouth
Vilvapeśika, Sū. 38, 22	Not identified	Taken internally	In deranged *pitta*, ulcers, fractured bones, and dysentery
Vimbī, Sū. 38, 4; 39, 2	Kunch tree *Coccinea indica* W.A. Syn.: *Momordica monadelpha* Roxb.	(a) Taken internally (fruits)	(a) In migraine and internal abscesses; reduces obesity Increases formation of breast milk; cures fevers, haemoptysis, cough, phthisis, and asthma
		(b) Roots taken internally	(b) As emetic
Visa, Sū. 46, 328, 332; *Ci.* 5, 10	The bulb of a lotus plant	(a) Bulbs taken raw, or cooked as vegetable	(a) In haemoptysis
		(b) Stem extracted with warm milk for local application	(b) In wasting and strophy of the leg muscles
Viṣamuṣṭika, Sū. 38, 9	*Strychnos nux-vomica* Linn.	Taken internally	In dyspepsia, catarrh, cough, and asthma

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Viśvadevā, *Sū.* 2, 32	*Uraria lagopoides* DC.	Taken internally in combination with other substances	Promoting child-birth
Vṛhatī, *Sū.* 37, 15; 38, 2, 4, 9, 15, 32; 46, 273 Syn.: *kākamācī*	Black nightshade *Solanum indicum* Linn.	(a) Ingredient of oily ointment	(a) For cleansing and sterilizing wounds
		(b) Taken internally	(b) In respiratory troubles, wasting diseases, abdominal swelling, dyspepsia, catarrh, and cough In migraine and internal abscesses; reduces obesity; destroys *vāyu*, *pitta* and *kapha* Tonic and aphrodisiac. In nausea, loss of appetite, and dysuria
		(c) Fruits cooked as vegetable	(c) Strengthening and roborant. Vermifuge, beneficial in itch and cutaneous skin diseases
Vṛkṣādanī, *Sū.* 38, 5; *Ci.* 6, 13 Syn.: *vandāka*	*Loranthus longiflorus* Desr.	(a) Taken internally	(a) Curative of all sorts of urinary troubles
		(b) Paste of the roots taken in combination with butter-milk	(b) In piles
Vṛścikālī, *Sū.* 38, 2, 8; 39, 3; *Ci.* 18, 37 Syn.: *viṣāṇikā*	Climbing nettle plant *Tragia involucrata* Jacq.	(a) Taken internally	(a) In respiratory troubles, consumption, and abdominal swelling For parasitic worms and skin diseases
		(b) Roots taken internally	(b) As purgative
		(c) Ingredient of medicinal plaster	(c) In goitre and scrofula

Name, references; synonyms, if any	English/Latin name	Mode of use	Medicinal uses
Yamānī, *Ci.* **38, 14;** ***Utt.*** **40, 20; 42, 53** Syn.: ***dīpyaka, yavānī***	Ajowan *Ptychotis ajowan* DC. Syn.: *Ligusticum ajowan* Flem.	(a) Ingredient of a mixture for internal use	(a) Potent tonic; in colic pain
		(b) As powder taken with tepid water or wine; or as decoction in lukewarm water	(b) In diarrhoea and abdominal swelling
Yaṣṭimadhu, ***Sū.*** **11, 13; 16, 18: 38, 13, 17;** ***Utt.*** **10, 3, 6** Syn.: ***madhuka, yaṣṭikāhva, yaṣṭyāhva***	Liquorice plant *Glycyrrhiza glabra* Linn.	(a) As a paste with clarified butter	(a) Relieves burning and ulcer due to alkali
		(b) Ingredient of paste	(b) For promoting growth of healthy tissues after surgery
		(c) As dry powder for dusting	(c) For promoting adhesion of operated tissues
		(d) Taken internally	(d) Purifies breast milk; cures dysentery Tonic; subdues deranged humours
		(e) Used after boiling with goat's milk or clarified butter along with other ingredients	(e), (f) For prophylactic treatment for the eyes
		(f) Ingredient of eye-salve	
Yava, ***Sū*** **14, 29; 16, 18; 17, 31**	Barley plant *Hordeum hexastichum* Linn.	(a) As dry powder pasted with mustard oil and salt	(a) Styptic
		(b) The paste cereal as an ingredient of massage cream	(b) For promoting growth of healthy tissues after surgery
		(c) Taken daily as part of diet	(c) Maintains acute vision even at old age

TABLE IV

Medicinal Substances of Mineral Origin and Their Uses

Name, references; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
Āgaradhūma, *Sū.* 14, 28	Kitchen soot	Ingredient of paste	To induce bleeding
Āñjana, *Sū.* 25, 12	Lampblack	As dusting powder	To keep bandages dry
Ap, *Sū.* 6, 10	Water	Used in various ways	—
Audbhidalavaṇa, *Sū.* 46, 345	Salt of vegetable origin; alkalis neutralized with acid vegetable juices	Taken internally	Moistens internal organs; restores deranged *vāyu*
Ayaskānta, *Sū.* 7, 11	Magnetite	As surgical aid	In minor surgical operations
Ayaskṛti, *Ci.* 10, 11-12	Iron powder dissolved in vegetable acids	Used in ointment	For persistent skin diseases
Bhasmaśarkarā, *Sū.* 11, 9	Potash	Ingredient of alkaline preparations	In cauterization
Danta, *Ci.* 35, 7	Ivory	As material for enema tubes and catheters	—
Dhātumākṣika, *Ci.* 9, 6	Iron pyrites (Ferrous sulphide)	Ingredient of ointment	For persistent skin diseases
Gairika, *Sū.* 14, 29; *Utt.* 44, 18 Syn.: *kāñcanagairika*	Ferruginous chalky deposit; red ochre	(a) Ingredient of powdered mixture	(a) In excessive haemorrhage
		(b) Compounded into linctus	(b) For jaundice

Name, references; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
Haritāla, *Sū*. 37, 12, 15; *Ci*. 1, 59, 86, 92; 6, 11	Orpiment	(a) Ingredient of paste for plug-stick	(a) For cleansing and sterilizing wounds; for bursting of cysts
		(b) Ingredient of liquid mixture	(b) For cleansing pus formed in an ulcer
		(c) Ingredient of paste	(c) For restoring natural colour to a cicatrix
		(d) Ingredient of medicated powder	(d) A depilatory powder
		(e) Ingredient of medicinal oil	(e) For removal of polyps in piles and for cleansing of wounds
Iṣṭaka, *Ci*. 32, 4	Burnt brick	As fomenting material	Diaphoretic
Itaralauha, *Sū*. 12, 3	Inferior metals	For making implements	Accessories for surgical cauterization
Kāca, *Sū*. 8, 11	Crystal; quartz or glass	As a cutting instrument	In surgery
Kāṃsya, *Sū*. 46, 363; *Utt*. 18, 49	Bell-metal	As calx	Subdues deranged *vāyu* and *kapha*; beneficial to eyesight
Kapālacūrṇa, *Sū*. 16, 14	Powered baked-clay	As dusting powder	To keep bandages dry
Kāsīsa, *Sū*. 37, 12, 28; *Ci*. 1, 15, 59, 86, 90; 6, 11	Green vitriol (Ferrous sulphate)	(a) Ingredient of paste for plastering the plug-stick	(a) For cleansing and sterilizing wounds
		(b) As an ingredient of medicated powder	(b) For destroying fleshy supergrowths in ulcers; for persistent skin disorders

Name, references; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
		(c) Ingredient of washing liquid	(c) For cleansing away pus from an ulcer
		(d) Ingredient of paste	(d) For restoring natural colour to a cicatrix due to surgery
		(e) Ingredient of medicinal oil	(e) For inducing growth of hair on a bald spot and for removal of polyps in piles
Kṣāra, *Sū*. 5, 3; 11; *Ci*. 6, 1-3	Alkalis	Solutions applied locally	Aid to surgery
			As alternative to surgery, and for removal of morbid growths in piles
Kṣaudra, *Sū*. 12, 3	Honey secreted by insects	For external application	In surgical cauterization
Kuruvinda, *Sū*. 8, 11; 37, 28; *Utt*. 15, 11	Ruby	(a) As a cutting instrument	(a) In surgery
		(b) Powder mixed into a medicated paste	(b) For destroying fleshy supergrowths in ulcers
		(c) As dusting powder	(c) For removing fleshy growths on eye-balls
Lauha, *Sū*. 18, 10; *Ci*. 6, 9	Metals	(a) As splint-materials	(a) In surgical bandages
		(b) As material for speculum	(b) For rectal examinations by speculum
Lavaṇa, *Sū*. 14, 28	Common salt	Ingredient of plaster	For promotion of bleeding

Name, references; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
Lavaṇāni, *Sū*. 37, 12; 46, 345; *Utt*. 12, 16-18 Six types : *saindhava*, *sāmudra*, *viḍa*, *sauvarcala*, *romoka*, and *audbhida*	Different salts, such as sea-salt, rock salt, fossil salt, salt from lixivating saline earth, and alkaline salt	(a) Ingredients of plasters and plug-sticks	(a) For cleansing and sterilizing wounds and for removing filmy growths over eyes
		(b) Taken as an article of diet	(b) Heat-producing, demulcent, purgative, and diuretic; subdues *vāyu*, and gives rise to the formation of *kapha* and *pitta*
Loha, *Sū*. 46, 364; *Ci*. 32, 4; 35, 7; *Utt*. 18, 11 Syn. : *ayas*, *kṛṣṇāyasa*	Iron	(a) Taken internally in preparations	(a) Cooling; subdues deranged *pitta* and *kapha*; generates *vāyu*
		(b) As fomenting material, used in the form of lump	(b) As a diaphoretic
		(c) As material for enema tubes and catheters	—
		(d) Powder as an ingredient of ointment	(d) For improving vision
Loharaja, *Sū*. 15, 32; *Ci*. 9, 18; 12, 10 Syn. : *kṛṣṇāyasacūrṇa*, *lauha-cūrṇa*	Finely powdered metallic iron	(a) Ingredient of mixture	(a) For controlling obesity
		(b) Ingredient of ointment	(b) For malignant ulcers
		(c) Ingredient of tonic	(c) For abdominal obesity, indigestion, haemorrhoids, swelling, jaundice, persistent skin diseases, asthma, and urinary diseases
Mākṣika, *Ci*. 13, 6 Two types : *suvarṇamākṣika* and *rajata-mākṣika*	Iron pyrites	Used in medicinal preparations	As described for each type

Name, references; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
Manaḥśilā, *Sū*. 37, 12, 28; *Ci*. 1, 86; 19, 19-20	Red arsenic sulphide (Realgar)	(a) Ingredient of medicinal plasters	(a) For cleansing and sterilizing wounds
		(b) Ingredient of medicated powder	(b) For destroying fleshy supergrowths in ulcers
		(c) Ingredient of paste	(c) For restoring natural colour to cicatrix
		(d) Ingredient of ointment	(d) For persistent skin diseases
		(e) Powder as an ingredient of a paste	(e) (f) For treatment of venereal diseases
		(f) Ingredient of pulverised mixture	
Maṇḍura, *Utt*. 44, 19, 29 Syn.: *lohakiṭṭa*	Iron rust	(a) As linctus	(a) For jaundice
		(b) Taken with cow's urine	(b) For malignant jaundice
Maṇi, *Sū*. 1, 24; *Utt*. 12, 16-18; 15, 11 Syn.: *aśmantaka*	Precious stones	Finely powdered and used as an ingredient of eye-salve or dusting powder	For removing filmy and pathological growths over eyes; and for all types of eye affections
Pākimakṣāra, *Sū*. 46, 354	Alkaline salts obtained by evaporation of alkaline fluids	Taken internally	Reduces obesity; strongly diuretic

Name, references; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
Pakti̇ma, *Sū*. 42, 17	Cooking salt	Used for seasoning food	Cleanses internal passages; causes softening of skin tissues, and bursting of swelling. If taken in excess causes scabies, urticaria, oedema, inflammation of eyes, haemoptysis, and loss of virility
Pakya, *Sū*. 42, 17	Saltpetre (Potassium nitrate)	Taken internally	As above
Pārada, *Ci*. 25, 20; *Ka*. 3, 12 Syn.: *sutārah*	Mercury	Ingredient of cosmetic ointment	For removing wrinkles, freckles, moles, and acnes from face; and for improving the complexion
Pulaka, *Utt*. 15, 11	A kind of precious stone	Finely powdered and used in external application	For removing growths on eye-balls
Rajata, *Sū*. 26, 14; 46, 361; *Ci*. 35, 7; *Ka*. 3, 12 Syn.: *rūpya*, *tāra*	Silver	(a) As material for enema tubes and catheters	
		(b) Taken internally in preparations	(b) Laxative, cooling; destroys *vāyu* and *pitta*
Rajatamākṣika, *Ci*. 13, 6	Marcasite ore (Silver iron pyrites)	As pasted with acid vegetable juices	For urinary gravel, chronic skin diseases, and as general tonic

Name, references; synonyms, if any	English equivalent	Mode of use	Medicinal uses
Rīti, Sū. 26, 14; *Ci.* 35, 7	Brass	As material for enema tubes and catheters	—
Romaka, Sū. 42, 17; 46, 345	Salt obtained from Sambara Lake	(a) Article of diet	(a) As in *paktima*
		(b) Taken alone internally	(b) Heating; increases secretions; diuretic and purgative
Śaikyāyasa, Sū. 8, 13	Tempered iron or steel	For making surgical instruments	
Saindhava, Sū. 19, 30; 37, 28; 42, 17	Rock salt	(a) Article of diet	(a) As in *paktima*
		(b) Ingredient of prescriptions	(b) As in *paktima;* for cleansing wounds and destroying abnormal fleshy growths
Sāmudra or *Sāmudraka* *Sū.* 42, 17; 46, 345	Salt crystallized from sea water	Article of diet	As in *paktima;* purgative, and cures colic pain
Sarjikākṣāra, Sū. 46, 354; *Ci.* 22, 6	Sodium carbonate; sesqui-carbonate of soda (Natron)	(a) Taken internally	(a) Reduces excessive secretion of *kapha;* relieves constipation; cures piles, abdominal growths, and abdominal swelling
		(b) Ingredient of medicated gurgles	(b) For treatment of oral suppurations
Sauvarcala, Sū. 42, 17; 46, 349	Soda neutralized with acid vegetable juices of emblic myrobalan	(a) As seasoning in diet	(a) As in *paktima*
		(b) Taken alone internally	(b) Appetizing, cleansing, and curative of colic pain and abdominal growths
Sauvarcika, Sū. 42, 17	Natural sodium carbonate	Taken internally	As in *paktima*

Name, references; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
Śilājatu, *Sū*. 15, 32; *Ci*. 9, 6; 13, 3-5; *Utt*. 44, 29	Mineral exudates or mineral bitumen	(a) Ingredient of mixture	(a) For controlling obesity
		(b) Ingredient of ointment	(b) For persistent skin diseases
Six different types according to contents of six different metals : tin, lead, copper, silver, gold, and iron		(c) Paste made after prolonged treatment with acid vegetable juices	(c) Cures diabetes; improves strength and complexion; insures long life, also cures many other chronic and difficult ailments
		(d) Taken internally with cow's urine	(d) For malignant types of jaundice
Sīsaka, *Sū*. 26, 14; 36, 355	Lead	Calx taken internally in preparations	Corrosive and destructive of worms
Sphaṭika, *Sū*. 8, 11; 46, 356; *Utt*. 15, 11	Crystals (calcite, quartz, etc.)	(a) As cutting instrument	(a) In surgery
		(b) Finely powdered substance taken internally in preparations	(b) Cooling, antitoxic, prophylactic, cleansing, and beneficial to eye-sight
		(c) Finely powdered and used for external applications	(c) For removing fleshy growths on eye-balls
Srotāñjana, *Utt*. 15, 11; 17, 17; 44, 29	Naturally occurring antimony sulphide	(a) Finely powdered and used in mixture	(a) For removing fleshy growth on eye-balls
		(b) Ingredient of eye-salve	(b) For improving vision
		(c) Taken internally with cow's urine	(c) For malignant types of jaundice

Name, references; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
Śuddhaśaikyāyasa, *Sū*. 8, 13	Purest varieties of iron or steel	Shaped into surgical instruments	For surgery
Sudhāśarkarā, *Sū*. 11, 6	Quicklime	Used for preparing strong caustic alkali	In cautery
Saurāṣṭraja, *Ci*. 1, 59	Natural deposit of alum from Saurastra	Used as an ingredient of wash-liquid	Elimination of pus from an ulcer
Suvarṇa, *Sū*. 1, 24; 26, 14; 46, 360; *Śā*. 10, 60; *Ci*. 35, 7 Syn.: *kanaka*, *kāñcana*	Gold	(a) Finely powdered and compounded in prescriptions	(a) Tonic, restorative elixir; subdues all deranged humors; cooling, anti-toxic, and improving vision, intellect, and memory
		(b) As material for enema tubes and catheters	(b) —
Suvarṇamākṣika, *Ci*. 13, 6; *Utt*. 44, 20 Syn.: *tāpya*	Pyrites ore of golden colour (Copper pyrites)	(a) Paste made after prolonged treatment with acid vegetable juices	(a) For urinary gravel, chronic skin diseases and as general tonic
		(b) Compounded into linctus after prolonged treatment with cow's urine	(b) In jaundice
Tāmra, *Sū*. 26, 14; 46, 362; *Ci*. 35, 7; *Utt*. 15, 11	Copper	(a) Taken internally in preparations	(a) Laxative, cooling, and corrosive
		(b) Fine dust as an ingredient of external application	(b) For removing fleshy growths on eye-balls
		(c) As material for enema tubes and catheters	(c) —
Taṅkaṇa, *Sū*. 46, 354, 359	Borax	Taken internally	Generates *vāyu*; subdues *kapha*; deranges *pitta*. Increases appetite

Name, references; synonyms, if any	English equivalent	Mode of use or application	Medicinal uses
Tīkṣṇalohapatra, *Ci.* 12, 11	Steel foils	Digested by prolonged treatment with vegetable juices and compounded into tonic wine	Reduces swellings, cysts, malignant skin diseases, leprosy, jaundice, urinary complaints, and abdominal swelling
Trapu, *Sū.* 26, 14; 46, 365	Tin	Taken internally in preparations	Corrosive, and destroys worms
Tuttha, *Ci.* 1, 86; 9, 19; *Utt.* 11, 5-6	Blue vitriol	(a) Ingredient of paste	(a) For restoring natural colour to a cicatrix
		(b) Ingredient of ointment	(b) For persistent skin diseases, and for malignant skin sores
		(c) Ingredient of eye collyrium	(c) For certain types of ophthalmia
Ūṣaraprasūta, *Sū.* 42, 17	Salt obtained by lixivation of saline earth or saline fossil deposits	Used for seasoning	As in *paktima*
Vaidūrya, *Sū.* 46, 366; *Utt.* 15, 11	A precious stone; cat's eye	Fine powder as an ingredient of mixture for internal use	Cooling, antitoxic, prophylactic, cleansing, beneficial to the eyesight, and for removing growths on eye-ball
Vajrendra, *Sū.* 46, 366	Diamond	Taken in preparations, in finely powdered form	Antitoxic, prophylactic, cleansing, and beneficial to eyesight
Viḍa, *Sū.* 42, 17; 46. 345, 350; *Ci.* 22, 6; *Utt.* 44, 20	Black salt; salt obtained fusing fossil salt with emblic myrobalan	(a) Taken as an article of diet	(a) As in *paktima;* appetizing, drying; cures colic pain and heart diseases
		(b) Ingredient of medicated gurgle	(b) For treatment of oral suppurations
		(c) Ingredient of linctus	(c) For jaundice

Name, references; synonyms, if any	English Equivalent	Mode of use or application	Medicinal uses
Yavakṣāra, *Sū*. 37, 12; 42, 17; *Ci*. 22, 6	Alkali prepared from barley plants	(a) Ingredient of paste	(a) For cleansing and sterilizing wounds
	(Potassium carbonate)	(b) Taken internally as diet	(b) As in *paktima;* relieves suppression of stool; cures enlarged spleen, piles, abdominal dropsy, and excessive mucus secretion
		(c) Ingredient of medicated gurgles	(c) For oral suppuration

TABLE — V

Anatomical and Physiological Terms

Name, references ; synonyms, if any	English equivalent
Adhipati, Śā. 6 79	Vertical groove of the frontal bone
Agni, Sū. 15, 4	Fiery principle present in the body in the form of bodily heat and digestive fire
Akṣaka, Śā. 5, 19 (two in number)	Collar-bones
Akṣakāṃsa, Śā. 5, 39 (two in number)	Shoulder blades
Akṣipakṣa, Śā. 3, 11	Eyelashes
Alocakapitta, Sū. 21, 13	Form of the second humour which causes perception of external heat, light, and energy
Āmāśaya, Śā. 5, 4, 7	Stomach
Aṃsa, Śā. 5, 3 (two in number)	Shoulders
Aṃsapiṇḍā, Śā. 5, 10	Shoulder cape
Aṅga, Śā. 5, 2 (six in number)	Major limbs (i.e. arms, legs, trunk, and supraclavical region)
Aṅguli, Śā. 5, 3 (twenty in number)	Fingers and toes ; digits
Antra, Śā. 5, 4	Intestines
Apāṅga, Utt. 1, 8	Exterior corner of the eye (outer canthus)
Aparā, Śā. 4, 24	Placenta
Apastambha, Śā. 6, 11	Branches of the bronchial pipe
Ārttava, Sū. 15, 8	Menstrual fluid
Āśaya, Śā. 5, 7 Seven kinds which contain the three humours, blood, food undergoing digestion, digested matter undergoing metabolism, and urine ; women possess an eight type, the uterus which contains the foetus	Internal receptacles
Aśrumārga, Utt. 1, 5	Tear-ducts

Name, references ; synonyms, if any	English equivalent
Asthi, Śā. 5, 17-21 Three hundred and sixty according to Āyurvedic treatises but Suśruta states that surgical sciences recognize only three hundred. Bones are of five types :	Bones
Kapāla	Flat bones
Rucaka	Small cubical bones
Taruṇa	Cartilages
Valaya	Thin curved bones without a medullary cavity
Nalaka	Long bones with medullary cavity
Asthimarma, Śā. 6, 2 (eight in number)	Bone predominant vital plexus formations
Asthisaṃghāta, Śā. 5, 15 (fourteen in number)	Localised collection of minor bones
Asthisandhi, Śā. 5, 23-28 Two hundred and ten in numbers, divided into two classes: *ceṣṭavanta,* movable, viz. diarthrosis, and *sthira,* immovable, viz. synarthrosis. Of these two hundred and ten, sixty-eight are in the four extremities ; fifty-nine in the trunk ; and eighty-three in the neck and in the region above. Eight different types of *sandhis* according to their forms and respective locations :	Joints
Kora	Hinged (bone) joints
Udūkhala	Ball and socket (bone) joints (enarthosis)
Sāmudga	Branching (bone) joints
Pratara	Irregular (bone) joints (arthrodia)
Tunnasevanī	Serrated (bone) joints (sutures)
Vāyasatuṇḍa	Crow-beak shaped (bone) joints
Maṇḍala	Circular or ring-shaped (bone) joints
Śaṅkhāvarta	Involuted and helical (bone) joints
Badana, Ni. 2, 8	Face

Name, references ; synonyms, if any	English equivalent
Bāhu, (two in number) *Śā*. 5, 3	Arms
Bhaga, *Śā*. 5, 19	Pudendum mulibre
Bhru, *Śā*. 5, 3 (two in number)	Eyebrows
Cibuka, *Śā*. 5, 3	Chin
Dantamūla, *Ni*. 16, 2	Gum
Daśana, *Ni*. 2, 8; 16, 2 (thirty-two in number)	Teeth
Dhamanī, *Śā*. 5, 4	Artery
Dṛṣṭi, *Utt*. 1, 5—6	Organ of vision
Dṛṣṭipaṭala, *Utt*. 1, 10	Layer inside the eye which gives vision (retina ?)
Gaṇḍa, *Śā*. 5, 4 (two in number)	Cheeks
Garbha, *Sū*. 15, 8	Foetus
Garbhāśaya, *Śā*. 5, 5	Uterus
Grīvā, *Śā*. 5, 4	Neck
Guda, *Ni*. 1, 3	Rectum
Gudauṣṭha, *Ni*. 2, 3	Outer opening of the rectum ; anus
Gulpha, *Śā*. 5, 18 (two in number)	Ankle (back portion)
Hanu, *Śā*. 5, 20 (two in number)	Jaws
Hasta, *Śā*. 5, 10 (two in number)	Hands
Hṛdaya, *Śā*. 5, 3	Heart
Indravasti, *Śā*. 6, 10 (two in number)	Calf muscles
Indriya, *Ni*. 2, 7 Five in number: *netra*, *karṇa*, *nāsā*, *jihvā*, *tvak* .	Sense organs
Jāla, *Śā*. 5, 4, 11 Sixteen in number : each ankle or wrist contains one each of four types — *māṃsajāla* (muscle predominant), *sirājāla* (capillary predominant), *snāyujāla* (ligament predominant), and *asthijāla* (bone predominant)	Plexus

Name, references ; synonyms, if any	English equivalent
Jalapaṭala, Utt. 1, 9	Aqueous humour in the eyes
Jaṅghā, Śā. 5, 18 (two in number)	Shanks
Jānu, Śā. 5, 3 (two in number)	Knees
Jihvā, Śā. 5, 2	Tongue
Kalā, Śā. 4, 2-20 Seven different types :	Tissues which carry or contain the fundamental elements of the body
Māṃsadharā	Superficial facia
Raktadharā	Vascular tissues
Medadharā	Adipose tissues
Śleṣmadharā	Lymph-carrying tissues
Purīṣadharā	Tissues which separate fecal matter from other contents of the intestinal tract
Pittadharā	Tissues which separate the *rasa* (chyle) from solid and liquid food in the stomach
Śukradharā	Tissues containing and conveying seminal secretions
Kakṣa, Śā. 5, 3 (two in number)	Armpits
Kakṣiadhara, Śā. 6, 12 (two in number)	Shoulder joints
Kālaka, Utt. 1, 10	Choroid layer of the eye
Kāṇḍara, Śā. 5, 10 (sixteen in number)	Ganglions of muscles and nerves
Kanīnaka, Utt. 1, 7—8 (two in number)	Interior corner of the eyes
Kaṇṭha, Ni. 16, 2	Throat
Kaṇṭhanāḍī, Śā. 5, 20	Windpipe
Kapāla, Śā. 5, 21	Flat bones
Karṇa, Śā. 5, 4 (two in number)	Ears
Kaṭī, Śā. 5, 23	Waist ; lumber region
Kaṭīkapāla, Śā. 5, 26	Pelvic bone

Name, references ; synonyms, if any	English equivalent
Kaṭīkataruṇa, Śā. 6, 13 (two in number)	Sacro-illiac cartilage
Keśa, Ci. 24, 49	Hair
Kloma, Ni. 9, 14	Broncho-pneumonal tract
Koṣṭha, Śā. 4, 16	Viscera
Kṛkāṭikā, Śā. 6, 14	Pelvic arch
Kṛṣṇamaṇḍala, Utt. 1, 5	Black portion of the eye (iris)
Kukṣi, Utt. 42, 63	Inguinal region
Kukundara, Śā. 6, 14	Sacro-sciatic hollow
Kūrcca, Śā. 5, 12 (six in number)	Clusters of muscles, bones, capillaries, and ligaments
Kūrpara, Śā. 6, 14 (two in number)	Elbows
Majjā, Sū. 14, 10	Bone-marrow
Mala, Sū. 15, 7, 8 ; *Śā.* 5, 4 (five in number) *purīṣa, mūtra, sveda, ārttava,* and *stanya*	Excretions and eliminations of the body
Malādhāra, Ni. 3, 14	Bodily receptacles which contain excrements before evacuation
Māṃsa, Sū. 14, 10	Flesh or muscular tissues
Māṃsarajju, Śā. 5, 13 Four, two from each side of the spinal column	Great muscular cords shaped like ropes
Manibandha, Śā. 6, 10 (two in number)	Wrists
Manyā, Śā. 6, 66-67	Major nerve leading into the supraclavical region
Marma, Śā. 6, 2-3 One hundred and seven in number divided into the five classes :	Vulnerable plexus formations
Māmsamarma, (eleven in number)	Muscle predominant vulnerable plexus formation
Sirāmarma, (forty-one in number)	Blood-vessel predominant vulnerable plexus formation
Snāyumarma, (twenty-seven in number)	Ligament predominant vulnerable plexus formation

Name, references ; synonyms, if any	English equivalent
Marma (*Contd.*)	
Asthimarma, (eight in number)	Bone predominant vital plexus formation
Sandhimarma, (twenty in number)	Vulnerable plexus formation associated with joints
Mastaka, *Śā*. 5, 3	Head
Mastuluṅga, *Ci*. 2, 51	Brain-matter
Meda, *Sū*. 14, 10	Fat
Medapaṭala, *Utt*. 1, 10	Fatty layer
Meḍhra, *Ni*. 2, 8	Male genitals
Mukha, *Ni*. 16, 2	Oral cavity
Mūrdhā, *Śā*. 5 10	Head
Muṣka, *Ni*. 3, 14	Scrotam
Mūtra, *Sū*. 15, 8	Urine
Mūtrāśaya, *Śā*. 5, 7	Bladder and urinary tract
Mūtravahānāḍī, *Ni*. 3, 14	Urethra
Nābhi, *Śā*. 5, 3	Umbilicus (navel)
Nakha, *Ni*. 2, 8	Nails
Nāsā, *Śā*. 5, 3	Nostrils
Nayana or *netra*, *Ni*. 2, 8 ; *Śā*. 5, 3 (two in number)	Eyes
Nayanabudbuda, *Utt*. 1, 4 (two in number)	Eye-ball
Nitamba, *Śā*. 5, 19	Hips
Ojas, *Sū*. 15, 22	Essence of vitality, supposed to permeate the entire organism
Oṣṭha, *Ni*. 16, 2 (two in number)	Lips
Pāda, *Śā*. 5, 10 (two in number)	Foot
Pādatala, *Śā*. 5, 18 (two in number)	Soles of the feet

Name, references; synonyms, if any	English equivalent
Pakkādhāna, Ni. 1, 3	Intestinal tract
Pakkāśaya, Śā. 5, 7	Intestines
Pakṣmamaṇḍala, Utt. 1, 6	Eyelashes
Pārśva, Śā. 5, 3 (two in number)	Sides (i.e. the lateral parts of the body from hips to shoulders)
Pārṣṇi, Śā. 5, 18	Heels
Paṭala, Utt. 1, 78	Layers in the eye
Pāyu, Śā. 5, 39	Anal sphincter
Peśī, Śā. 5, 37, 42 (five hundred in number ; twenty extra in women)	Muscles
Peśīsandhi, Śā. 5, 29	Muscle-joints
Phaṇa, Śā. 6, 14	Channel of the nostrils leading to the oral cavity
Phuppusa, Śā. 5, 4	Lungs
Pitta, Sū. 15, 4	Bile
Pittāśaya, Śā. 5, 7	Gall-bladder
Plīhā, Śā. 5, 4	Spleen
Pratyaṅga, Śā. 5, 3	Visible parts of the human anatomy
Pravāhinīpeśī, Ni. 2, 4	Rectal muscle which opens the anal sphincter
Pṛṣṭha, Śā. 5, 3	Back
Purīṣa, Sū. 15, 7	Faeces
Raktāśaya, Śā. 5, 7	Blood vessels
Rasa, Sū. 14, 10	Chyle (the milky fluid into which food is transformed before being absorbed into the blood)
Retas, Sū. 14, 10 ; *Ni.* 4, 5 Syn : *śukra*	Seminal fluid
Roma, Śā. 7, 17-18	Body-hair

Name, references; synonyms, if any	English equivalent
Sakthi, Śā. 6, 41	Legs
Samvaraṇīpeśī, Ni. 2, 4	Rectal muscle which closes the anal sphincter
Saṅkha, Śā. 5, 3 (two in number)	Temples
Śepha, Ni. 3, 14	Penis
Sevanī, Śā. 5, 39	Perineum
Sevanī, Śā. 5, 14 (seven in number)	Junctions of muscular tissues, having the appearance of sutures
Sīmanta, Śā. 5, 16 (fourteen in number— Suśruta states that some authorities recognise four more, making a total of eighteen)	Terminal formations
Śiras, Śā. 5, 20	Head cranium
Sirā, Śā. 7, 2 Seven hundred of four different types :	Blood vessels, lymphatic channels, and nerves
Vātavāhinī, Śā. 7, 5-6 Ten major nerves subdivided into one hundred and seventy-five	Nerves
Pittavāhinī, Śā. 7, 5 Ten major tubes branching into one hundred and seventy-five minor tubes	Capillaries and tubes conveying bile and heat
Kaphavāhinī, Śā. 7, 5 Ten major tubes branching into one hundred and seventy-five minor ones	Lymphatic vessels and tubes
Raktavāhinī, Śā. 7, 5 Ten major tubes branching into one hundred and seventy-five minor ones	Arteries and veins
Sirāmātṛka, Śā. 6, 68	Jugular veins
Śirāsandhi, Śā. 5, 29	Joining of blood vessels and circulatory tubes
Śleṣman, Sū. 15, 5	Phlegm
Śleṣmāśaya, Śā. 5, 7	Bodily receptables which contain the phlegm
Snāyu, Śā. 5, 30, 34-35 Nine hundred of four different types:	Ligaments and connective tissues
Pratanvatī	Branching ligaments
Vṛttā	Ring-shaped ligaments

Name, references; synonyms, if any	English equivalent
Snāyu (*Contd.*)	
Pṛthu	Thick and broad ligaments
Suṣira	Perforated ligaments
Śoṇita, Sū. 21, 3 ; *Śā.* 3, 8	Blood
Sphik, Śā. 5, 4 (two in number)	Buttock
Śroṇi, Śā. 5, 10	Pelvis
Srota, Śā. 5, 9	Internal ducts
Stana, Śā. 5, 3 (two in number)	Breasts
Stanamūla, Śā. 6, 6	Pectoral muscles
Stanavṛnta, Śā. 9, 29	Nipples
Stanya, Sū. 15, 8	Breast milk
Sthūlāntra, Ni. 2, 4	Large intestines
Sūkṣmamūtravahānāḍī, Ni. 3, 14 (innumerable in number)	Extremely fine urinary ducts invisible to the naked eye ; *Tubuli uriniferi*
Sveda, Sū. 15, 7	Sweat
Śvetamaṇḍala, Utt. 1, 7-8	White portion of the sclerotic coat of the eye-balls
Tala, Śā. 5, 18	Sole
Tālu, Ni. 16, 2	Palate (roof of the mouth)
Trika, Śā. 5, 15	Sternum
Tvak, Śā. 4, 3 Seven successive layers ending with the outermost epidermis or outer skin	Skin (dermis or epidermis)
These are :	
Avabhāsinī	Innermost layer of dermis with a reflecting surface
Lohitā	Second (from innermost) layer of dermis with a red hue
Śveta	Third (from innermost) layer of dermis with white colour

Name, references; synonyms, if any	English equivalent
Tvak (Contd.)	
Tāmra	Fourth (from innermost) layer of dermis with a coppery hue
Vedinī	Fifth (from innermost) layer of dermis
Rohiṇī	Sixth (from innermost) layer of dermis
Māṃsadharā	Epidermis or outermost skin
Udara, Śā. 5, 3	Abdomen
Uṇḍuka, Śā. 5, 4	Blind gut (opening of the intestines into the colon)
Ūru, Śā. 5, 3 (two in number)	Thighs
Vakṣa, Śā. 5, 10	Chest
Vaṅkṣaṇa, Śā. 5, 15 (two in number)	Groins
Vartmamaṇḍala, Utt. 1, 7 (two in number)	Eyelids
Vasti, Śā. 5, 3	Bladder
Vastimukha, Ni. 9, 14	Mouth of the bladder
Vidhura, Śā. 6, 12	Posterior ligament of the outer ears
Vimba, Śā. 5, 10	Buttocks
Visarjjanīpeśī, Ni. 2, 4	Rectal muscle which controls defection
Viṭapa, Śā. 6, 43-44	Groin muscles
Vṛkka, Śā. 5, 4	Kidney
Vṛṣaṇa, Śā. 5, 3 (two in number)	Testis
Yakṛt, Śā. 5, 4	Liver
Yogavahāṇī, Śā. 5, 5	Capillaries
Yoni, Śā. 3, 3	Female reproductive organ
Yonimukha, Śā. 3, 7	Orifice of womb

TABLE — VI

Medical and Surgical Terms

Name, references; synonyms, if any	English equivalent
Abhyañjana, *Ci*. 3, 46	Anointing
Ācāra, *Sū*. 1, 36	Observance of hygienic rules and prescribed medical regime
Ācūṣaṇa, *Sū*. 7, 13	Suction
Adhobhakta, *Utt*. 64, 26	Medicine taken just after meal
Agnikarma, *Sū*. 12	Cauterization
Tvagdagdha	Surface cauterization
Māṃsadagdha	Internal cauterization
Agnipratapana, *Sū*. 12, 15	Fomentation
Āhāra, *Sū*. 1, 36	Proper diet
Āharaṇa, *Sū*. 7, 12	Extraction
Akṣitarpaṇa, *Ci*. 5, 32	Eye-lotion
Ālepana, *Sū*. 8, 3	Pastes or plasters
Āmataila, *Ci*. 3, 30	Raw and unmedicated oil
Āñchana, *Sū*. 6, 13 ; *Ci*. 3, 16	Lifting to the surface
Antarbhakta, *Utt*. 64, 27	Medicine taken in between two major meals
Anulama, *Sū*. 27, 4	Pushing a *śalya* (splinter) embeded in the body and removing it from the new exit
Anumarjana, *Ci*. 3, 26	Rubbing of the fractured limb before bandaging
Anuvāsana, *Ci*. 7, 18	Oily enema
Ardhacandra, *Ci*. 8, 7	Excision in the shape of a half-moon (in the case of fistula)
Ardhalāṅgalaka, *Ci*. 8, 5	Acute angled incision with unequal arms
Ariṣṭa, *Ci*. 10, 6 ; 11, 8	Medicated liquors
Āsava, *Ci*. 10, 7 ; 11, 8	Distilled wine or liquors

Name, references; synonyms, if any	English equivalent
Āścyotana, Utt. 10, 6 ; 12, 8, 13, 32	Dropping of medicated liquid into the eye
Āsthāpana, Ci. 7, 18	Non-oily enema
Aupasargika, Sū. 35, 13-14	Sympathetic disease
Avacāraṇa, Ci. 3, 17	Application
Avāṅmukha, Ci. 8, 7	Deep excision
Avaleha, Ci. 10, 2, 9 ; 12, 9	Lambative or electuary
Avasādana, Ci. 1, 77	Destruction of supergrowth
Bhañjana, Sū 6, 13	Rubbing the head, ears, etc ; contusing a part all round before it is surgically operated on
Cālana, Sū. 7, 12 ; *Ci.* 3, 16	Transferring, i.e., removing from one part to another
Candracakra, Ci. 8, 7	Incision in the form of moon's disc (in fistula)
Bhedana, Sū. 27, 3	Incision
Cūrṇa, Ci. 10, 2, 9 ; 12, 10	Pulverized product
Dahana, Sū. 11, 3	Blistering, burning, cauterizing
Dāraṇa, Sū. 41, 5 ; 7, 13 ; 27, 3	Bursting of abscess
Dāruṇīkaraṇa, Ci. 1, 79	Hardening measures
Dhāvana, Ci. 22, 17	Brushing or cleaning of teeth
Dhūmapāna, Ci. 1, 109	Inhalation of smoke or vapour
Dhūpana, Ci. 1, 74	Fumigation
Dīpana, Sū. 38, 11	Appetizing
Duṣṭaśoṇita, Śā. 8, 58	Vitiated blood
Four types :	
Avagāḍha,	Confined deep into the body
Piṇḍita	Clotted blood
Sirāṅgavyāpaka	Extended to all parts of the body
Tvacisthita	Seated in the skin
Eṣaṇa Sū. 6, 13 ; 7, 12	Probing, exploring
Gandhataila, Ci. 3, 45	A kind of medicated oil

Name, references; synonyms, if any	English equivalent
Gotīrthaka, Ci. 8, 4	Longitudinal excision
Grāsāntara, Utt. 64, 31	Medicine subdivided and taken with alternate morsels
Guṭikā, Utt. 18, 31	Pill
Kalka, Ci. 1, 70	Paste
Karṇavyadhana, Ci. 16, 1-18	Process for plastic surgery on the outer ears
Karṣū, Ci. 4, 11	A kind of hot fomentation which causes sweat. This is carried out by putting hot coals in a receptacle underneath the bed of a sick person
Kaṣāya, Ci. 31, 9	Decoction
Kavala, Ci. 1, 108 ; 22, 30 Syn : *gaṇḍūṣa*	Gargling
Kavalikā, Sū. 5, 13 ; *Ci.* 3, 26	Strips of cotton pad used for bandaging fractured limbs
Kharjurapatra, Ci. 8, 7	A type of incision in the form of a date-palm leaf (fistula)
Kṣārakarma, Sū. 11, 3	Alkali cauterization
Kuṭī Ci. 4, 11	Vapour bath in a closed chamber
Lāṅgalaka, Ci. 8, 5	Acute-angled excision with the arms equal in length
Lavaṇa, Ci. 4, 24-26	Medicated salt, prepared with vegetable products like leaves, barks, twigs, and roots of plants
Lekhana, Sū. 5, 3	Scarification or dissection of a skin-flap ; scraping
Mardana or *Unmardana, Ci.* 4, 6, 8 ; 24, 28 Syn.: *udvartana*	Massage
Mārgaviśodhana, Sū. 6, 13	Cleansing or draining of a body channel
Mṛdvikriyā, Ci. 1, 78	Softening measures
Muhurmuhu, Utt. 64, 30	Medicine taken at repeated intervals of time, irrespective of other food

Name, references; synonyms, if any	English equivalent
Nāḍīsveda, Ci. 8, 5	Fomentation through *nāḍī* or pipe
Nasya, Ci. 3, 46 ; 40, 18 Composition of powders of desired drugs or *sneha* (oleaginous substance) boiled with same drug or drugs, to be stuffed into nostrils	Snuffs
Two broad divisions :	
Sirovirecana	Errhines
Snehana	Errhines with oleaginous substances
Further division into five types :	
Nasya	Snuffing of any prescribed composition
Śirovirecana	Errhines for head
Avapīḍa	Expressed juice of drug put into the nostrils in drops by pressing it with the palms then and there
Pratimarśa	Medicated *sneha* drawn through the nostrils into the mouth
Pradhamana	Medicinal snuff blown into the nostrils with the help of a blow-pipe
Nibandhanī, Ci. 3, 26	Ligation
Nirbhakta, Utt. 64, 24	Medicine taken on empty stomach
Nirdhmāpana, Sū. 27, 2	Blowing in air, or spray of cold water into the affected part
Nirghātana, Sū. '6, 13	Withdrawing a probe after probing to and fro
Pācana, Sū. 11, 3; 15	Suppuration; drying up of wounds
Pañcakarma	Application of five medical measures
Ci. 33-40	
Vamana	Emesis
Virecana	Purgation
Nasya	Sternutation
Āsthāpana	Non-oily-enemas
Anuvāsana	Oily enemas

Name, references; synonyms, if any	English Equivalent
Pariṣecana, Sū. 27, 3; *Ci.* 24, 21 Syn.: *seka*	Spraying of cold water; affusion
Paścātkarma, Sū. 5, 3-17	Post-operative measures
Patradāna, Ci. 1, 99	Application of leaves on an ulcer
Pāyana, Sū. 8, 9	Tempering of iron instruments in alkaline solutions, oil, or plain water
Phalavarti, Ci. 5, 36-38	Suppository
Phenaka, Ci. 24, 31	A kind of friction of the body with small wooden rollers
Piccita, Ci. 3, 24	Partial splintering of the bone
Pīḍana, Sū. 7, 13; 27, 2; *Ci.* 3, 16	Squeezing, pressing
Prabhāva, Sū. 1, 27	Inherent nature
Pradhānakarma, Sū. 5, 3	Principal measures including surgery in operation cases
Pradhamana, Sū. 7, 13	Blowing fumes or fine powder inside a cavity
Prāgbhakta, Utt. 64, 25	Medicine taken just before meal
Prākkevala, Sū. 35, 13-14	Primary or original disease
Prakṣālana, Sū. 7, 13	Flushing with water
Pramārjana, Sū. 7, 13	Cleansing or scrubbing
Pratiloma, Sū. 27, 4	Direct extraction by suitable means in a direction contrary to the mode of entry
Pratimarṣa, Sū. 27, 2	Digital friction and manipulation
Pratisāraṇa, Śā. 11, 4; *Ci.* 22, 30	External application of alkali in wound; dusting
Pravāhaṇa, Sū. 27, 2	Forcible extraction by muscular straining
Praviṣṭa, Ci. 3, 33	Downward displacement of the neck due to fracture
Pūraṇa, Sū. 7, 13	Injecting into, or filling up of, a cavity
Pūrvarūpa, Sū. 35, 13-14	Premonitary stage or indication of a disease

Name, references; synonyms, if any	English Equivalent
Rasa, *Sū.* 1, 27; 40, 3; *Utt.* 18, 31	Taste; dense liquid
Rasakriyā, *Ci.* 1, 59, 68	Process for preparing medicine by thickening the decoction of any drug
Ropaṇa, *Śā.* 11, 3; *Utt.* 18, 27	Healing
Ṛjukaraṇa, *Śā.* 7, 13	Straightening out
Sabhakta, *Utt.* 64, 28	Medicine taken mixed or compounded with ordinary food
Śambukāvarta, *Ci.* 8, 2	Conical and serrated opening
Saṃkṣepaṇa, *Ci.* 3, 16	Shortening
Sāmudga, *Utt.* 64, 29	Medicine taken immediately before and again immediately after a meal
Saṃśamana, *Sū.* 1, 36	Pacification and transquilization of deranged humours
Saṃśodhana, *Sū.* 1, 36	Cleansing processes
Saṃvāhana, *Ci.* 24, 60	Shampooing
Sandhāna, *Sū.* 15, 13; *Ci.* 1, 22	Adhesion; contraction of wounds
Sarvatobhadraka, *Ci.* 8, 3	Cross-shaped opening
Śirāvyadha, *Sū.* 13, 4; *Śā.* 8, 1-4; *Ci.* 4, 11 Syn.: *śirāmokṣaṇa*	Venesection
Śirovasti, *Ci.* 4, 20	An application of medicated oil on the head by tying a piece of leather all round the head, and luting its margin to the skin by pasted *māṣa* pulse and then filling the cavity with oil
Sīvana, *Sū.* 25, 9, 11 Four types :	Suturing
Vellita	Winding
Gophaṇika	Sling-like
Tunnasevanī	Continued suture
Ṛjugranthi	Interrupted suture

Name, references; synonyms, if any	English Equivalent
Skandhana, Sū. 15, 3	Thickening of blood (clotting)
Snaihikadhūma, Ci. 22, 22	Emulsive fumes
Snehana, Utt. 18, 32	Emulsifying
Snehapāka, Ci. 31	Preparation of oleaginous substances
Śodhana, Sū. 11, 3	Purification; disinfection
Śoṇitāsthāpana, Ci. 1, 22	Arrest of bleeding
Śoṇitāvasecana, Sū. 13, 2	Blood-letting
Śoṣaṇa, Sū. 11, 3	Absorption
Sphuṭita, Ci. 3, 24	Cracked bone
Stambhana, Sū. 11, 3	Stiffening
Sūcīmukha, Ci. 8, 7	Incision in the shape of needle's mouth
Suptavāta, Ci. 4, 14	Complete anaesthesia
Surā, Ci. 10, 8; 11, 12	Liquor
Svabhāva, Sū. 27, 2	Natural function of the body
Śvasana, Sū. 27, 2	Hard breathing
Svedana, Śā. 2, 4; *Ci.* 32	Diaphoresis
Four types :	
Tāpasveda	Direct heating
Uṣmasveda	Fomentation
Upanāhasveda	Poulticing
Dravasveda	Application of heated fluid
Syandanataila, Ci. 8, 5	A kind of medicated oil
Tarpaṇa, Utt. 18, 2-8	Soothing measures
Udgharṣaṇa, Ci. 24, 29	Friction
Unmanthana, Sū. 67, 13	Stirring or churning up the track formed by an impacted foreign body with a probe

Name, references; synonyms, if any	English Equivalent
Unnamana, Sū. 7, 13	Bending upwards
Upanāha, Sū. 17, 20; *Ci.* 5, 8; 32, 8	Poultice
Utkarikā, Ci. 1, 22	Massive poultice
Utkāśana, Sū. 27, 3	Breathing forcibly upwards through the nostrils
Utpiṣṭa, Ci. 3, 17	Crushed bone
Uttaravasti, Ci. 1, 22	Urethral or vaginal enema
Vamana, Sū. 27, 2	Vomiting
Vandhana, Sū. 18, 11; *Ci.* 3, 16	Bandaging
Kośa	Like a sheath or scabbard
Dāma	Like a cord or chaplet
Svastikā	Cross-like
Anuvellita	Twisted
Pratolī	Winding
Maṇḍala	Ring-shaped
Sthagikā	Like a betel-box
Yamaka	Double or twin
Khaṭvā	Four-tailed bandage
Cīna	T-shaped bandage
Vibandha	Noose-like
Vitāna	Caphaline bandage
Gophaṇā	Sling-like
Pañcāṅgī	Five-limbed
Vartana, Sū. 7, 13	Rotation or swirling motion
Varti, Sū. 5, 13, 37, 13; *Ci.* 9, 17; 14, 15-16; *Utt.* 12, 10	Plug-stick

Name, references; synonyms, if any	English Equivalent
Vastikarma. Ci. 3, 46	Enemata measures
Vikarṣaṇa, Sū. 7, 13	Pulling out
Viśliṣṭa, Ci. 3, 17	Fractured or dislocated part
Vivṛtta, Ci. 3, 33	Twisting of neck due to dislocation of bone
Vikeśikā, Sū. 18, 13	A kind of compress; lint
Vilayana, Sū. 17, 3	Corrosive; liquefaction
Vimalāpana, Ci. 1, 22	Resolution by massage
Vinamana, Sū. 7, 13	Bending downwards
Vipāka, Sū. 1, 27; 40, 9	Transformatory or reactionary effect
Visrāvaṇa, Sū. 8, 3	To let out pus as from a deep-seated abscess
Virecana, Sū. 27, 2	Purgation
Vīrya, Sū. 40, 4	Potency
Vivaraṇa, Sū. 7, 13	Exposing
Vraṇadhūpaṇa, Ci. 1, 22	Fumigation of an ulcer
Vṛmhaṇa, Ci. 1, 22	Strengthening
Vyadhana, Sū. 8, 3	Puncturing
Vyūhana, Sū. 7, 12, 13	Raising up and incising a part for removing thorn; bringing together the lips of the wound
Yantraśaṭaka, Ci. 7, 13	Lithotomic strap
Yāpana, Utt. 8, 2	Palliative measures

TABLE — VII

NAMES OF DISEASES, PATHOLOGICAL CONDITIONS AND THEIR TREATMENT

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Abhiṣyanda, *Utt*. 6, 2; 8, 7; 9; 10, 11, 12 Four types : *vātaja*, *pittaja*, *kaphaja*, and *raktaja*	Inflammation of the entire eye-ball attended with other symptoms peculiar to the four different types	Ophthalmia or Ophthalmitis	Treatment according to specific measures applicable to the various forms of the disease named
(i) *Vātaja abhiṣyanda*, *Utt*. 6, 3; 8, 7; 9, 3	Inflammation of the eye-ball attended with pricking pain, numbness, local irritation, dry sensation, lachrymation, and headache; caused by deranged *vāyu*	—	Treatment as described for *vātaja adhimantha*
(ii) *Pittaja abhiṣyanda*, *Utt*. 6, 4; 8, 6; 10, 2	Inflammation of the eye-ball, attended with slight suppuration, burning sensation, hot lachrymation, and clouded and yellow vision; caused by deranged *pitta*	—	Treatment as described for *pittaja adhimantha*
(iii) *Kaphaja abhiṣyanda*, *Utt*. 6, 5; 11	Inflammation of the eye-ball attended with heavy and cold sensations, itching, swelling, and constant formation and discharges of slimy white mucus	—	Treatment as described for *kaphaja adhimantha*
(iv) *Raktaja abhiṣyanda*, *Utt*. 6, 6; 8, 6; 12, 2-10	Inflammation of the eye-ball attended with blood shot eyes, flow of dark mucus, deep red veins on the eyes, pricking pain, numbness, dryness, and headache	—	Treatment as described for *raktaja adhimantha*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Adhikadanta, *Ci.* 22, 16	Growth of an extra tooth	—	The additional tooth is uprooted and removed by dental forceps. The bleeding, if severe, arrested by cauterization and healed by measures described under *kṛmidanta*
Adhimantha, *Utt.* 6, 8-11, 14; 8, 7 Four types : *vātaja*, *pittaja*, *kaphaja*, and *raktaja*	A type of chronic *abhiṣyanda*, which causes excruciating pain in the eye-balls, extend to one half on the head. Other symptoms are specific to the various forms of the disease	Migraine caused by eye troubles	Treatment according to specific measures applicable to the various forms of the disease named
(i) *Vātaja adhimantha*, *Utt.* 6, 8; 8, 6; 9, 2, 3	Excruciating, cutting, and fiery pain in the eyes, attended with swelling and migraine of half of the head of the affected side due to deranged *vāyu;* may lead to blindness within a week, if not treated	—	Local applications of old clarified butter; fomentation, then local venesection Enema for purgation *Tarpaṇa*, *puṭapāka*, *āścyotana* measures (vide Table VII), local fumigation, application of medicated snuffs and errhines, local cleaning with medicinal oils; dilute alcohol decoction of healing drugs Poulticing with mixtures of animal fat, marrow, milk curds, clarified butter, etc., or special preparations Application of medicated collyrium

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(ii) *Pittaja adhimantha*, *Utt.* 6, 9; 8, 6; 10	Excruciating and burning pain in the eyes, redness, swelling, and suppurations of the eyes, yellowish vision, perspiration and fainting fits; may lead to blindness within a few days if untreated; caused by deranged *pitta*	—	General treatment as described for *pittaja visarpa* Local venesection Use of purgatives Application of specially prepared eye-washes, eye-drops, and collyriums, as described in *Utt.* 10, 3-6
(iii) *Kaphaja adhimantha* *Utt.* 6, 10; 8, 6; 11, 2-5	Excruciating pain in the eyes with swelling, congestion, itching, heavy feeling, sensation of cold. Slimy mucus deposits on the eyes, attended with intense headache; clouded vision and horripilation; may lead to blindness within a week, if left untreated	—	Venesection or hot fomentation. Use of special snuffs, collyriums, fumigation, eye-washes, plasters, eye-drops. Medicated *ghṛta* with bitter drugs for local application and internal use
(iv) *Raktaja adhimantha* *Utt.* 6, 11; 8, 6; 12, 2-10	Excruciating pain in the eye with a deep-red appearance, pain and extreme sensitiveness to touch. Blindness may follow within a week if the conditions is left untreated	—	Application of eye-drops, eye-salves, and soothing measures Special application described in *Utt.* 12, 6-10
Agnirohiṇī, *Ni.* 13, 15; *Ci.* 20, 27	Dark-red to violet boils, deep seated and attended with a fiery pain, appearing on the waist. Fever is present caused by simultaneous derangement of all three humours	A type of inflammatory disease	An incurable disease ending in death within two to three weeks Palliative measures follow those recommended for *visarpa*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Ahipūtana, *Ni.* 13, 43; *Ci.* 20, 29-30	Eruptions and itching on, and around, the anus of a child, due to lack of cleanliness. This may develop into an obstinate and running eczema which spreads in all sides	Sore buttocks	Special potions, and external applications in the shape of ointments and dusting powders as described in *Ci.* 20, 30
Ajagallikā, *Ni.* 13, 3; *Ci.* 20, 2	Eruption of pimples over extensive areas of the skin of young children. The eruptions are hard, glossy, and painless	—	Application of leeches to the affected part followed by plastering with alkalis obtained from oyster-shell (i.e. quicklime from shell), natron, and barley; of plastering with compounded drugs named If suppurated, treatment on the lines mentioned under *vraṇa*
Alasa, *Ni.* 13, 25; *Ci.* 20, 13	Whitish growths between the toes with pain, burning sensation, itching and slight discharges; caused by contact of dirty water with the bare foot	Chilblain	Wetting the local skin with newly fermented wine and application of a special ointment described; blood letting
Alasaka, *Utt.* 56, 5	Excessive pain, acidity, and stuffed feeling inside the stomach, intestinal noises, obstinate constipation, hiccup, and eructations due to faulty diet	—	Treatment as described for *viṣūcikā*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Amānuṣadoṣa, Utt. 60	Swollen eyes, quickened and staggering gait, foaming mouth, drowsiness, licking own lips with the tongue, utterly shameless conduct, extreme cruelty, extraordinary bodily strength, extreme uncleanliness, fetid smell from body, and aversion to human company	—	Treatment by oblations, religious rites, chanting of mantras Fumigation by burning animal skins and hair, local applications of various animal matters and drugs
Amlādhyuṣitadṛṣṭi, Utt. 6, 18; 10, 7	Swelling and discolouration around the eyes, following excessive intake of acid substances	—	Treatment as described for *pittaja adhimantha* Regular use of special medicated *ghṛtas*
Anāha, Ni. 1, 15; *Utt.* 56, 14-15	Complete suppression of bowel movement and urination, due to deranged *vāyu,* the secondary symptoms are excessive thirst, catarrh, sense of heaviness and cramp in the stomach, nausea, colic pain, and difficult respiration	Acute constipation with uraemia	Emesis followed by digestive drugs and light diet. Fomentation, rectal suppository, fumigation of the rectal passage by fumes of burning drugs, and enema are recommended. Decoctions of proper medicines are also used as general medical measure
Andhālajī, Ni. 13, 5; *Ci.* 20, 3-4	Circular patches of thick, raised, pointed eruption exuding a small amount of pus at intervals	—	Treatment consists of fomentation, plastering with suitable drugs. Surgical incision is made in suppurating stage

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Annapānaviṣa, *Ka.* 1, 11-35	Headache, cardiac pain, burning sensation in the hands and feet, swelling and numbness of the tongue, copious salivation, epileptic fits, vomiting, diarrhoea, distention of the abdomen, shivering, derangement of sense perceptions, perspiration, fever and pain — many of such symptoms may occur according to the nature of the poison and extent of duration. Effects of prolonged action are: failing off finger-nails, sallow complexion, swelling of lips and tongue, suppuration, bursting of the skin, bleeding from nostrils, etc.	Food-poisoning	Treatments are specific to each type of poison diagnosed by chemical and physiological tests described in the text First aid consists in emetics and purgatives; venesection may be necessary in some cases Specific remedies of drugs, compounded together, as well as all-purpose remedies like antitoxic medicated *ghṛtas* are described. The diet of a person suffering from the effects of poisons should largely consist of honey, clarified butter, milk, milk-curds, cold water, and flesh of peacocks, mongoose, and deer — cooked with honey and specified drugs
Antarą-vidradhi, *Ni.* 9, 12-21; *Ci.* 16, 22-23	Abscesses or suppurating tumours in the throat, bladder, kidneys, liver, spleen, rectum, broncho-pneumonial area or other regions, caused by deranged humours. They cause pain, fever, local symptoms, morbid matter discharged from the mouth or the rectum	Internal abscesses	Treatment by surgical incision, draining, and subsequent healing; but this treatment is not possible on the heart, bladder, umbilicus or other vulnerable parts, where medical treatment is the only possible method, though the chances of cure are small If unsuppurated, treatment is aimed at subduing the condition by emollient and pacifying drugs After surgery and draining of pus through the incision or any natural opening of the body, healing medicines applied

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Anuśayī, *Ni.* 13, 18	A small, deep-seated swelling of normal skin colour, suppurating in the deeper strata but externally without pus formation	—	—
Anyatovāta, *Utt.* 2, 2-3; 6, 17; 8, 6	Unbearable pain in the eyes and the eyebrows, due to the action of deranged *vāyu*	—	Treatment as described for *vātaja adhimantha* Special diet consisting largely of milk and clarified butter; and special drugs Use of specially prepared collyrium
Apacī, *Ni.* 11, 8-9; *Ci.* 18, 12-21	Number of hard, glossy, painless, and elongated swellings of skin colour, situated near the waist, jaw-bones, joints, neck, or armpits. There may be slight pain and spontaneous bursting	Scrofula	Treatment requires prolonged medication lasting over years. Venesection should be performed as early as possible The swelling should be surgically incised even in the unsuppurated stage and cauterized or scarified; measures described in *vraṇa*
Apasmāra, *Śā.* 8, 25-26; *Utt.* 61, 22-23	Epileptic fits with frothing at the mouth, along with hysteria in an insane patient	Epilepsy and hysteria	Venesection at the middle vein next to the angle of the jaw, or a vein in the temples or in the forehead
Apavṛttaphala, *Sū.* 11, 17	—	Prolapse of the uterus	—
Apavṛttayoni, *Sū.* 11, 17	—	Prolapse of the vagina	—

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Arbuda, *Ni.* 11, 11-16; *Ci.* 18, 22-23 Four types: *raktaja*, *māṃsaja* or *medaja*, *adhyārbuda*, and *dvi-arbuda*	Slowly developing, slightly painful tumours in any part of the body caused by vitiation of three *doṣas*, the flesh or fat, and blood. The tumours seldom suppurate, are immovable, and have roots very deep inside the tissues	Tumours and malignant growth	Treatment consists in applications of special poultices, fomentation with boiled meat containing large proportion of fat, internal fumigation, massage, use of emetics and purgatives, and special medicines Scarification of the flesh after plastering and causing germination of worms and parasites in the affected part of an ulcer, followed by cauterization and healing Superficial tumours are covered by thin foils of metals cauterized by heat, and the ulcer produced, healed as in *vraṇa* Incision preceeded by fomentation and followed by cleansing the wound and plastering it with a specially prepared compound as described in *Ci.* 18, 32, and then healing with the medicated oil in case of *medaja arbuda*
(i) *Raktaja arbuda*, *Ni.* 11, 12	A slightly suppurated tumour with scanty exudations, covered with small papilla and nodules. Growth is rapid, and, on puncturing, there is a copious flow of vitiated blood. The patient becomes pale and sallow in complexion	Malignant tumour	Normally incurable, but palliative treatment as for *arbuda*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(ii) *Māṃsārbuda*, *Ni.* 11, 14; *Ci.* 18, 32-33	Stone-hard, glossy, painless, non-suppurating tumours of normal colour, caused by deranged *vāyu* and excessive intake of meat develops it quickly and ends in death, if left untreated	Malignant tumours (Myoma)	Treatment as described for *arbuda*
(iii) *Adhyārbuda*, *Ni.* 11, 15; *Ci.* 18, 22-23	A secondary tumour developing over a primary non-suppurating tumour	Metastic growths	Normally incurable, but palliative treatment in the lines described under that of *arbuda*
(iv) *Dvi-arbuda*, *Ni.* 11, 15; *Ci.* 18, 22-23	A pair of hard, painless, non-suppurating tumours which develop side by side	—	As above
Armadoṣa, *Utt.* 8, 4; 15, 1-8	Affections of the eye, involving swellings, morbid growths, coloured patches, etc. The symptoms vary with different types of diseases	—	The polyp is removed by a sharp scraping instrument. The root of the polyp is also carefully isolated and surgically removed, being careful to avoid the pupil. About a quarter of the polyp is left and later removed by scraping Application of eye-salves, eye-drops, plasters, etc. until the eye regains its former appearance and lustre
Arocaka, *Utt.* 57, Five types: *vātaja*, *kaphaja*, *pittaja*, *tridoṣaja*, and *mānasa* (psychological)	Aversion to food caused by deranged humours, or fear, grief, ungratified desire, strong emotions, etc. The symptoms vary with different types but may include cardiac pain, bad taste in mouth, excessive thirst, fainting fits, heavy feeling, drowsiness, mental aberration, etc	Anorexia	Treatment by internal medicinal prescriptions. Use of a accustomed diet, palatable dishes, tasteful drinks and variety of food and drinks

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Arśas, Ni. 2; *Ci.* 6 Six types: *vātaja, pittaja, kaphaja, śoṇitaja, sannipātaja,* and *sahaja* (congenital causes)	Growth of polyps or fleshy condylomata (piles) inside the rectum and in the anal region due to impaired digestion. The stool may be charged with blood, or there might be sudden haemorrhages. In later stages there is growth of hard papilla of various shapes around the anus	Haemarrhoids or piles	Application of medicated ointment Application of alkali or heat cautery Surgery, according to the stage or gravity of the disease The diet should consist of cereals, clarified butter, milk, soups made from bitter vegetables, and the use of light vegetable and potherbs as diet. General diuretic, laxative, and appetizing diet is recommended Many prescriptions for medicinal treatment for internal and external piles are given in *Ci.* 6, 11-18
Ārttavadoṣa, Śā. 2, 4, 13-16 Syn.: *śoṇitodoṣa*	Clotted or thin and pale menstrual blood with offensive smell	—	Emesis, purgation, nutritive enemas, diaphoresis, external application of medicinal oils, application of local ointments, medicated pessaries and plugs, medicinal douches and proper diet. An internal prescription of extracts of drugs is recommended only in some cases
Aruṃṣikā, Ni. 13, 28; *Ci;* 20, 16	Extensive patches of reddish swelling of the scalp, which become tender, cracked, and moist; a number of outlet for the discharges may develop on the surface	Eczema of the face and scalp	Blood-letting from local part followed by cold compress with decoction of margosa leaves Use of special medicinal plaster

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Aśmarī, *Ni.* 3, 1-15; *Ci.* 7, 3-12, 13-19 Four types: *vātāśmarī* (due to deranged *vāyu*), *pittāśmarī* (due to deranged *pitta*), *śleṣmāśmarī* (due to deranged *śleṣma*), and *sukrāśmarī* (due to concretion of undischarged semen)	Formation of gravel or stone-like concretions of fine or large size inside the bladder due to deranged *kapha* ; difficulty in urination, pain in the urogenital region ; thickness, turbidity, unusual smell and colour of urine	Urinary calculi	Cases with recent history are treated medically. Large stones and gravels formed in chronic and long-standing cases require surgical (lithotomic) operations Medicinal prescriptions for internal and external uses to cure radically the symptoms as well as the underlying causes, are described Surgical operations for male and female patients are described in detail. The usual precautions and post-surgical measures are to be taken
Asṛgdara, *Śā.* 2, 19; *Utt.* 45	Excessive menstrual discharge, appearance of menstrual period long before expected time ; persistence of flow long after expected cessation ; unusual colour of menstrual blood : local and general pain ; in serious cases weakness, lassitude, vertigo, partial loss of vision, unconsciousness, difficult breathing, delirium, pallor and drowsiness, hysteria and convulsions may also occur	Menorrhagia	Treatment recommended is identical with that of *raktapitta*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Asthigata-vidradhi *Ni.* 9, 25-26	Suppuration of the marrow followed by an abscess situated on bone matter, caused by deranged humours. There is excruciating pain and local secretion of thick, white pus which comes out on incision being mde	Bone abscess	Incurable ; treatment as indicated for *majjājāta vidradhi*
Atīsāra, *Utt.* 40 Six types: *vātaja, pittaja, kaphaja, tridoṣaja, śokaja*, and *āmātīsāra*	Looseness of bowels, liquid stools (diarrhoea) due to improper or contaminated food, improper habits or parasitic growths in the intestinal regions. The first signs are: Piercing pain in around the lower abdomen, suppression of normal bowel movements, distention of the abdomen and indigestion. The stool is always abnormal in colour and consistency. In acute (*āma*) stage and chronic (*pakva*) stages the supervening symptoms, like watery liquid stool with fetid smell and emitting in broken jets in case of the former, and in the latter a contrareity of these symptoms with the sense of lightness of the body and in the affected organ are noticed	Diarrhoea and dysentery	Complete fasting at outset followed by restricted diet of barley water, drugs, and salts Emetics and purgatives where natural cleansing of the alimentary canal has not been affected by diarrhoea Milk should be given in case of suppression of stool and *vāyu* and attended with griping constant scanty motions ; diluted milk should be given in all dysentery Clarified butter is recommended when the the stool is mixed with blood Special medicines consisting of twenty different recipes are recommended for the acute and chronic stages of the disease

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(i) *Vātaja atīsāra*, *Utt.* 40, 5	Colic, suppression of urine, rumbling sound in the intestines, numbness in the limbs, and frequent emissions with flatus of a scanty, frothy, dry, and brown-coloured stool ; caused by the aggravation of *vāyu*	—	As above
(ii) *Pittaja atīsāra*, *Utt.* 40, 6, 30-33	The stool is foetid, hot, yellow blue or slightly red-coloured, or like the washings of meat, and emitted with sharp or acute force ; accompanied by thirst, epileptic fits, burning sensation, perspiration, suppuration, and inflammation of the affected organs, and fever ; caused by the derangement of *pitta*	—	General treatment as described under *atīsāra* Special remedies consist of intake of decoction prepared with prescribed drugs as described in *Utt.* 40, 30-33
(iii) *Kaphaja atīsāra*, *Utt.* 40, 7	In the *kapha* aggravated *atīsāra* the stool is white, loose, constant, and mixed with lump of mucus. Drowsiness or sleepy feelings, heaviness in the limbs, nausea, anorexia, etc. are the other symptoms	—	As described for *atīsāra*
(iv) *Tridoṣaja atīsāra*, *Utt.* 40, 8	Drowsiness, swoon, lassitude, dryness of the mouth, thirst, and a varied colour of the stool ; caused by the concerted action of the three deranged bodily humours	—	As above

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(v) *Śokaja atīsāra, Utt.* 40, 9	Blood-mixed stool with a peculiar fetor when the sparing diet of a bereaved person, on quenching the digestive fire goes down into the intestines, and gets mixed with, and vitiates the local blood ; it becomes devoid of any foetid smell when the blood passes without being mixed up with fecal matter	—	As described for *atīsāra*
(vi) *Āmātīsāra, Utt.* 40, 10, 16-29	This is caused when the aggravated bodily *doṣas* came in contact with the unassimilated chyle in the abdomen, brought down in the bowels where they are more agitated and emitted in combination with the undigested foecal matter in various ways ; attended with pain and marked by variety of colour	—	As above
Avapāṭikā, Ni. 13, 40; *Ci.* 20, 25	Constriction and abnormal folding of the skin of the prepuce caused by external pressure or forcible movements	Paraphimosis	Treatment as described for *parivartikā*
Bhagandara, Ni. 4, 1-10; *Ci.* 8 Five types: *śataponaka, uṣṭragrīva, parisrāvī, śambukāvarta,* and *unmārgī*	Suppuration and sinus formation inside the rectum, perineum, bladder and adjoining areas, so that channels of communication form between them. The inner ulceration is extremely painful, non-healing, and itching	Anal fistula; rectal fistula	As long as the fistula remains unsuppurated, the treatment is similar to that described in *vraṇa*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
			Specific surgical measure for each type of fistula is recommended when pus forms or the ulcer bursts and exudes morbid matter. Preliminary examination is carried out for this purpose after soothing the patient, and giving him a warm bath. The patient is securely bound, the seat of infection raised and cleaned by a probe and an incision made if necessary. If the disease is not far advanced cauterization may be used
(i) *Śataponaka*, *Ni.* 4, 3, 14, 14; *Ci.* 8, 5	Dark red painful pustules inside the rectum which suppurates and exudes a slimy secretion. Later the pustules are enclosed by a large number of holes forming a seive-like mass, from which jets of stool, urine, gases and semen come out, attended with intense and cutting pains	Multiple fistula	General measures as described under *bhagandara* A long-term programme of surgery begins with excising, cleaning, and healing the minor ulcers around the principal network of sinuses. Then the external orifices of the connected sinuses are similarly treated, leaving the unconnected channels undisturbed, as otherwise they would combine into wide-mouthed ulcer, very difficult to cure The main channels lett are finally similiarly reduced to one, which is ultimately opened by various types of excision, fomented, drained, and treated with drugs

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(ii) *Uṣṭragrīva*, *Ni*. 4, 4; *Ci*. 8, 6	Dark red pustules inside the rectum which suppurate with fetid discharge of urine, stool, gases, and semen. Extremely painful with constant burning sensation	—	General treatment as described for *bhagandara* After surgical examination and cleaning with a probe, strong alkali is applied to remove and destroy all degenerated tissues. Bandaging is then done after applying a thick medicated ointment. The bandage is kept constantly soaked with clarified butter and removed on the third day. Cleansing, disinfecting, healing, etc. are then carried out by internal and external medications
(iii) *Parisrāvī*, *Ni*. 4, 5; *Ci*. 8, 7	White, hard, itching, and painful pustules inside the rectum, which suppurate, swell, emit a constant slimy secretion and also jets of stool, gas, etc.	—	General treatment as described for *bhagandara* After examination, the blood, pus and other morbid matters are cleaned out, and the area cauterized by alkali or fire. Medicinal oils in warm condition, warm plasters and poultices of specified composition are then applied After a period, the ulcer is found to be soft, free from pus and secretions, and much less painful. Another probing is made; the principal sinus is excised, cleaned, cauterized, and treated as before. Medicinal plugs are kept constantly inserted until complete healing

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iv) *Śaṃbukāvarta*, *Ni* 4, 6; *Ci.* 8, 17-21	Large carbuncle type growth inside the rectum with extreme pain and burning sensation; it suppurates and emits secretions of different colours		It is not possible to effect a radical cure of this type of fistula, but partial cure and arrestation can be made by measures indicated for *bhagandara*. Surgical treatment can also be tried by performing the surgical methods indicated for other types
			Many medicinal compositions for prolonged use are described in the text
(v) *Unmārgī* Also known as *śalyaja* or *āgantuka*, *Ni.* 4, 7; *C.*. 8, 10	Constant scratching and abrasion of the rectal openig due to hard stool containing undigested particles of bones, etc. develop into ulcers infested with parasitic growths which corrode the local tissue. Holes and sinuses are formed from which jets of stool, urine, gas, and semen spurt out	—	General treatment as described in *bhagandara*
			The sinus is located and surgically excised, then cauterized red hot; cleaning up of all foreign matter present; usual post-surgical measures
Bhagārśas, *Ni.* 2, 15	Ulceration, constant itching, and growth of fine papilla or warts which cover the outer opening of the vaginal passage. The local tissues progressively degenerate with discharge of bloody, slimy matter	—	Treatment as described for *arśas*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Bhagna, Ni. 15, 1; *Ci.* 3 Two types: *sandhimukta* and *kāṇḍabhagna*	A general name for fractures and dislocations	—	Treatments described under specific diseases named. Generally, the patient should not take salts, acids, pungent or alkaline substances, until cure; should avoid exposure to the sun or unnecessary physical exercise. Diet should consist of boiled rice, meat soup, pulses, milk, clarified butter and other constructive and nutritive foods. Shaped wooden splints should be used in suitable cases or the fractured parts encased in a medicated plaster which dries up and becomes stiff. Proper setting with minimum of movement is ensured as above and by bandaging
(i) *Sandhimukta, Ni.* 15, 3; *Ci.* 3, 16 Six types: *utpiṣṭa, viśliṣṭa, vivartita, adhaḥkṣipta, atikṣipta* and *tiryakkṣipta*	Disengagement or dislocation of any bone-joint along with pain, tenderness, and restriction (or total absence) of natural movements and functions of the affected parts	Dislocation of joints	General treatment as described for *bhagna*; specific treatment consists of *āñchana* (pulling up), *pīḍana* (pressing), *saṃkṣepaṇa* (shortening), *bandhana* (bandaging) of the affected parts
(a) *Utpiṣṭa, Ni.* 15, 5; Ci. 3	Swelling of both sides, and pain which increases at night (after remaining in one posture for a long time), indicating a dislocation of bone-joints	Fracture dislocation	Treatment as described for *bhagna*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(b) *Viśliṣṭa*, *Ni.* 15, 5; *Ci.* 3	Simple dislocation with constant pain and moderate swelling; the normal functioning of the joint is hampered	Incomplete dislocation	As above
(c) *Vivartita*, *Ni.* 15; 5; *Ci.* 3	Slipping of connecting or mutually-fitting bones, marked by visible unevenness and pain	Lateral displacement of bones	
(d) *Adhaḥkṣipta*, *Ni.* 15, 5; *Ci.* 3	Dislodgement of a bone making it apparent by drop or hang down from its normal position, marked by extreme pain	Downward dislocation	
(e) *Atikṣipta*, *Ni.* 15, 5; Ci. 3	Dislodgement of a bone to an abnormal position, attended with extreme pain	Complicated dislocation	Treatment as described for *sandhi-mukta*
(f) *Tiryakkṣipta*, *Ni.* 15, 5; *Ci.* 3	Lateral displacement of a bone marked by intolerable pain	Complete dislocation	Treatment as described for *bhagna*
(ii) *Kāṇḍabhagna*, *Ni.* 15, 6-8; *Ci.* 3 Twelve types: *karkaṭaka*, *aśvakarṇa*, *cūrṇita*, *piccita*, *asthicchallita*, *kāṇḍa-bhagna*, *majjānugata*, *atipātita*, *vakra*, *chinna*, *pāṭita* and *sphuṭita*	(a) Different types of fractures due to different causes and showing different symptoms, swelling, abnormal appearance, pain, discomfort, etc. are general	(a) Fractures of all types	(a) Complete cures are seldom possible in senile persons, or in fractures of the pelvic bones, compound fractures of thigh-bones, and fractures of the skull, breast-bone, backbone, and fractures which have been allowed to set without proper surgical help In wrongly set fractures, the joint should be again disjointed, set properly and treated as ordinary fracture

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
	(b) In this type the completely broken or severed bones are found to project through the local skin	(b) Transverse fracture	(b) As in (a)
(a) *Karkaṭaka*, *Ni.* 15, 6, 8; *Ci.* 3	A straight bone, bulging out in an irregular shape in the middle of the fracture	Simple fracture	Treatment described as for *kāṇḍa-bhagna*
(b) *Aśvakarṇa*, *Ni.* 15, 6, 8; *Ci.* 3	A fractured bone projecting out as a jagged end, without actual perforation of the skin	Oblique fracture	As above
(c) *Cūrṇita*, *Ni.* 15, 6, 8; *Ci.* 3	Multiple fracture of a bone showing usual symptoms	Simple fracture of the comminuted type	,,
(d) *Piccita*, *Ni.* 15, 6, 8	A portion of the bone being smashed, there is excessive swelling and pain apart from other usual symptoms	A type of complicated fracture	,,
(e) *Asthicchallita*, *Ni.* 15, 6, 8; *Ci.* 3 (f) *Kāṇḍabhagna*, (Same as *kāṇḍabhagna* (b)	Splintering of the periosteum (outer layer) of the bone without actual fracture	Splintered fracture	,,
(g) *Majjānugata*, *Ni.* 15, 6, 8; *Ci.* 3	A fracture involving the piercing of a bone upto its core of marrow by the jagged or broken fragment of another bone	Impacted fracture	,,
(h) *Atipātita*, *Ni.* 15, 6, 8; *Ci.* 3	A fractured bone dropping or hanging down in an unnatural shape	Complete fracture	,,

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(i) *Vakra*, *Ni.* 15, 6, 8; *Ci.* 3	Bending of a bone without actual fracture (possible in infants, old, weak, asthma or leprosy patients); permanent bending of a cartilage	Greenstick fracture	Treatment as described under *kāṇḍa-bhagna*
(j) *Chinna*, *Ni.* 15, 6, 8; *Ci.* 3	A fracture occurring at one extremity of a bone, very near a joint, so that it appears like a dislocation	Incomplete fracture	,,
(k) *Pāṭita*, *Ni.* 15, 8; *Ci.* 3	Splintering of bone with perforation occurring in nearby bones, indicated by an excruciating pain	Fissured fracture	,,
(i) *Sphuṭita*, *Ni.* 15, 8; *Ci.* 3	Cracking of a bone without actual breaking off into two portions, marked by excessive pain and swelling	A type of fissured fracture	,,
Chardi, *Utt.* 49 Five types: *vātaja*, *pittaja*, *kaphaja*, *āgantuja* (traumatic), and *krimija* (caused by worm)	Nausea, salivation, aversion to food and drink followed by scanty ejection of frothy liquid with astringent taste; cramps at back and sides, fatigue after digestion of meals due to deranged *vāyu* In case of deranged *pitta* ejection of yellow, green or blood-streaked matter with acid and pungent taste, fever, fainting, cold feeling, etc. Excessively cold, white, sweet, thick and mucus vomiting	Chronic nausea; vomiting	Cleaning the stomach by emesis and purgation Special medicines and diet as described in *Utt.* 49, 12-18 The patient should continue with a light and nutritious diet of palatable drinks, tastefully cooked dishes, meat-soups, etc.

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
	attended with horripilation an aversion to food, heaviness of the limbs and lassitude due to deranged *kapha* Indigestion, presence of worms or taking of incongenial food and drink are the causes of the traumatic origined disease. Violent cramps and nausea are the symptoms of *krimija* type		
Calita danta, *Ci.* 3, 35	Loosened teeth, without actual breaking off or falling out	Loose teeth	Draining off any morbid blood; application of cooling paste after washing with a decoction of drugs with adhesive properties. If unable to take food, the patient should take liquid food through a narrow tube (hollow stem of tube)
Cippa (cipya), *Ni.* 13, 16; *Śā.* 8, 27; *Ci.* 20, 6-7 Also known as *upanakha* and *ksatranakha*	Pain, burning, suppuration, and sloughing off of the flesh under finger-nails	Onychia purulenta	Local bleeding Washing with hot water, removal of all morbid matter after surgical incision, application of medicated oil, medicated dusting powder, and then bandaging; healing by drugs as described in *Ci.* 20, 7
Dantamūlaroga, *Ni.* 16, 13; *Ci.* 22, 9-21 Eleven types: *śītada*, *dantapupputaka*, *dantaveṣṭaka*, *śauṣira*, *mahāśauṣira*, *paridāra*, *upakuśa*, *dantavaidarbha*, *vardhana*, *adhimāṃsa*, and *dantanāḍī*	Various symptoms affecting the gums and roots of teeth are found in different diseases	Diseases affecting the gums and roots of teeth	Treatments described under specific diseases named

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(i) *Śītada*, *Ni*. 16, 14; *Ci*. 22, 9	Blue-black colour, suppuration, bleeding, and sliminess of the gums developing suddenly; pronounced halitosis	Scorbutic affection of the gums	The gums bled freely by rubbing and then an astringent of special composition regularly used as gurgle A thick and drying ointment for application on the gums is described in *Ci*. 22, 9
(ii) *Dantapupputaka*, *Ni*. 16, 15; *Ci*. 22, 10	Rapid and extreme swelling at the root between two teeth with pain	Gum-boil	The gums bled freely by rubbing and then five types of salt with alkaline powders mixed with honey, applied regularly for cure The food should be rich in fats and oils
(iii) *Dantaveṣṭaka*, *Ni*. 16, 14; *Ci*. 22, 11	Looseness of teeth with frequent discharges of blood and pus	Pyorrhoea alveolaris (Suppurative gingivitis)	The swelling is relieved by rubbing until free bleeding occurs Regular use of gargles and applications, described in the text
(iv) *Śauṣira*, *Ni*. 16, 17; *Ci*. 22, 12	Itching and painful swelling of the gums, along with copious flow of saliva	A type of alveolar abscess	Bleeding the affected part freely by rubbing Application of a special paste described in *Ci*. 22, 12
(v) *Mahāśauṣira*, *Ni*. 16, 18; *Ci*. 22, 12	Fissures on the palate, looseness of teeth, putrefaction of the gums, and general inflammation of the oral cavity	Gangrenous stomatitis	Treatment as described for *śauṣira*
(vi) *Paridāra*, *Ni*. 16, 19; *Ci*. 22, 13	Bleeding, suppuration, and gradual retraction of the gums	Retraction of gums	A thorough cleansing of the system by emetics, purgatives, and errhines

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(vii) *Upakuśa*, *Ni.* 16, 20; *Ci.* 22,. 14	Looseness of the teeth, bleeding due to slightest contact, and burning sensation of the gums, pain, general swelling of the mouth and halitosis	Advanced stage of pyorrhoea	The affected gum rubbed by certain leaves until bleeding freely, followed by application of a mixture of salts Warm solutions of drugs used as gargles
(viii) *Dantavaidarbha*, *Ni.* 16, 20; *Ci.* 22, 15	Swelling of gums and looseness of teeth due to injuries or blows	A type of gingivitis	The affected gum lanced, cleaned and treated with alkaline solutions. Application of pacifying drugs
(ix) *Vardhana*, *Ni.* 16, 22; *Ci.* 22, 16	Growth and appearance of the extreme molar tooth at a certain age, marked by extreme pain which subdues when the tooth cuts through the gum	Wisdom tooth	Surgical lancing followed by healing application
(x) *Adhimāṃsa*, *Ni.* 16, 23; *Ci.* 22, 17	Extremely painful boils on the roots of the molar teeth accompanied by copious flow of saliva	A type of gum-boil epulis	The additional fleshy growth is removed surgically and treated with an healing ointment described Regular use of gargles and dentifrice described in *Ci.* 23, 17
(xi) *Dantanāḍī*, *Ni.* 16 24; *Ci.* 22, 18	Sinus formations inside the gums and roots of teeth with pus, pain, and halitosis	Sinusitis of the roots of the teeth and gums	Treatment is the same as for *nāḍīvraṇa*
Five types: *vātaja*, *pittaja*, *kaphaja*, *sannipātaja* and *abhighātaja*			The affected part should be opened by a surgical knife and the pus drained off. If the affected tooth or teeth be situated in the lower jaw they should be extracted. The

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
			parts and fragments of teeth imbedded in the gums should be scrupulously removed to prevent further extension of the sinus
			Extraction of an upper tooth is attended with the danger of excessive haemorrhage and facial paralysis. Medicinal remedies prescribed
Dantaroga, *Ni.* 16, 25; *Ci.* 22	Different symptoms for the different diseases affecting the teeth	Diseases of the teeth	Treatments as described under specific diseases named
Eight types: *dālana*, *kṛmidantaka*, *dantaharṣa*, *bhañjaka*, *śarkarā*, *kapālikā*, *śyāvadantaka*, and *hanumokṣa*			
(i) *Dālana*, *Ni.* 16, 26; *Ci.* 22, 25-26	Sudden and violent pain in the teeth	Toothache — odontodynia	Incurable; general treatment by pacifying drugs in the shape of gargles, errhines, fumigation, and internal medication
(ii) *Kṛmidantaka*, *Ni.* 16, 27; *Ci.* 22, 25-26	Caries of the tooth, with consequent looseness, perforation, pain, general swelling and copious flow of saliva	Dental caries	If the affected tooth is firm, fomentation and draining of morbid matter, gargles, and plasters, containing drugs with pacifying properties are prescribed
			The diet should contain enough fats and oils

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
			When the teeth has become loose, it should be extracted and the empty sockets cauterized with fire. Healing measures as usual The patient should avoid acid juices, cold water, dry and hard articles of food, and vigorous brushing of the teeth
(iii) *Dantaharṣa*, *Ni.* 16, 28; *Ci.* 22, 22	Extreme sensitiveness of the teeth to heat, cold or touch	Loss of enamel of the teeth — odontitis	Regular use of warm, medicated, oily emulsions of pacifying drugs or of an application as described
(iv) *Dantabhañjaka*, *Ni.* 16, 29; *Ci.* 22, 24	Gradual disintegration and breaking off of teeth along with severe pain and distortion of features		Treatment on the lines of *kṛmidanta* may prove as palliative, but the disease is incurable
(v) *Dantaśarkarā*, *Ni.* 16, 30; *Ci.* 22, 23	Hardened deposits of tartar and calcerous matter at the roots of the teeth	Tartar formation on the roots of teeth	The deposits are carefully removed by proper instruments; the affected part covered with a mixture of lac and honey Treatment as described for *dantaharṣa*
(vi) *Dantakapālikā*, *Ni.* 16, 31; *Ci.* 22, 24	Erosion and loss of enamel of the teeth, due to separation of pieces of tartar deposits	Erosion of teeth and receding gums	Very hard to cure, but slowly improves by the treatment described for *dantaharṣa*, over prolonged periods
(vii) *Śyāvadantaka*, *Ni.* 16, 32; *Ci.* 22, 46	The teeth gradually assume a blue-black or black colour not due to any stain or any other known cause	Blackening of teeth	Considered incurable, but long treatment on the lines described for *upakuśa* may lead to some improvement

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(viii) *Hanumokṣa*, *Ni.* 16, 33; *Ci.* 4, 22, 27	Dislocation of the jaw-bones by immoderate opening of the mouth or chewing hard substances	Dislocation of the jaw-bones	Treatment same as described for *ardita*
Dāruṇaka, *Ni.* 13, 28; *Ci.* 20, 17	Hardness, dryness, and stiffness of body where roots of hair are present with constant itching, caused by deranged *vāyu* and *kapha*. The disease may be confined to the scalp only	Seborrhoea capitis	Application of medicated oil and fomentation, followed by venesection on the forehead Measures for relieving the congestion on the head and application of antiseptic washes
Digdhaviddhakalpa, *Ka.* 5, 19-20 Also known as *Śalyaviṣa-kalpa*	Wounds from poisoned darts, arrows, etc. which are known by the following symptoms : immediate flow of dark, blackish blood, quick suppuration, putrefaction of the surrounding flesh and morbid discharges, excessive thirst, vertigo, epileptic fits and high fever	—	Treatment should be similar to those indicated for snake-bites (*sarpaviṣa-kalpa*) and poisonous spider bites (*lūtāviṣa-kalpa*)
Dṛṣṭigataroga, *Utt.* 7 Twelve types: *liṅganāśa* (six types), *pittavidagha-dṛṣṭi*, *dhūma-darśī*, *hrasva-jātya*, *nakulāndhya*, and *gambhīra*	Various symptoms of diseases peculiar to the pupil of the eye	—	Treatment as described for each type

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(i) ***Liṅganāśa, Utt.* 7, 6, 13-16, 24; 17, 26-28, 34-36, 38-41** **Also known as *nīlikā* and *kāca*** Six types: *vātaja, pittaja, kaphaja, raktaja, sannipātaja,* and *parimlāyī*	Complete loss of vision apart from a faint perception of bright light; other symptoms vary with different forms of the disease; caused by aggravated *doṣas* (humours), and vitiated blood, heated condition of the head, etc.	Loss of vision	The disease is beyond radical cure, but can be arrested by palliative measures including surgery A detailed description of the surgical process for removal of the crystalline lens recommended for ***kaphaja*** *liṅganāśa* (cataract) is given in *Utt.* 17, 34-36 Relapse can take place even after most careful surgery and after-treatment but general prophylactic measures will keep this in check
(a) ***Vātaja liṅganāśa, Utt.* 7, 13; 9; 17, 25**	A variety of *liṅganāśa* in which the pupil becomes red in colour and rough; caused by the aggravation of *vāyu*	A type of corneal opacity	General measure with drugs for subduing aggravated *vāyu* Local application of eye-salve, prepared from antimony sulphide
(b) ***Pittaja liṅganāśa, Utt.* 7, 14; 17, 26-27**	A variety of *liṅganāśa* in which the pupil becomes blue or bluish yellow in colour with a film over the pupil due to the action of deranged *pitta*		Use of special snuff and eye-salve as described in *Utt.* 17, 26-27
(c) ***Kaphaja liṅganāśa, Utt.* 7, 14; 17, 28, 34-37**	A variety of *liṅganāśa* in which the pupil becomes milky-white in colour and there is a thick, oily translucent film over the pupil which moves with lateral pressure	Cataract	Snuffing, fumigation, and lubrication with particular drugs; a detailed description of the surgical process for removal of the crystalline lens

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(d) *Raktaja liṅganāśa*, *Utt.* 7, 14; 17, 30-31	A variety of *liṅganāśa* in which there is blood-red film over the pupil; caused by vitiation of blood	—	Treatment as described for *parimlāyī*
(e) *Sannipātaja liṅganāśa* *Utt.* 7, 14; 17, 29, 34-37	A variety of *liṅganāśa* in which there is multi-coloured film over the pupil; caused by the aggravation of the three *doṣas*	—	Local application of eye-salve as described in *Utt.* 17, 29; the other remedial measures as described for *vātaja*, *pittaja*, and *kaphaja* types may also be applied
(f) *Parimlāyī*, *Utt.* 7, 12-15; 18, 30-51	The sky and space seem brilliantly lit and yellowish or orange; trees seem to be sparkling with moving dots of light. A bright and glistering patch of bluish-yellow colour develops over the cornea; caused by the aggravation of blood with *pitta*	—	Treatment as described for *pittaja timira* and *abhiṣyanda*; applications of errhines and eye-salves as described in *Utt.* 18, 30-51
(ii) *Pittavidagdhadṛṣṭi*, *Utt.* 7, 18; 17, 2-8, 12-18	Yellowish colour of the pupil; the patient sees everything yellow and clearly in the night, but not during the day	—	Special medicines and eye-salves, *Utt.* 17, 2-8, 12-18)
(iii) *Śleṣmavidagdhadṛṣṭi*, *Utt.* 7, 19; 17, 2-5, 9-17	All visible objects appear milky white ; the vision is much better during the day than in the night	A type of night-blindness	General treatment as described for *kaphaja adhimantha* Special potions and eye-collyriums as described in *Utt.* 17, 2-5 Night-blindness is cured by application of specially prepared eye-salve and collyrium described in *Utt.* 17, 9-17

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iv) ***Dhūmadarśī***, *Utt*. 7, 20; 10, 9	All visible objects seem dusky or smoky in appearance. This condition may follow from an injury of the head, or over-straining of muscles	—	General treatment as described for *rakta-pitta* and *pittaja visarpa* Local application and regular use of diet of clarified butter
(v) ***Hrasvajātya***, *Utt*. 7, 17, 21	Small and near things can be seen with great difficulty even in the day time, but distant objects seen clean even at night	Long-sight	Open to palliative measures only. Surgical treatment not to be undertaken
(vi) ***Nakulāndhya***, *Utt*. 7, 22	Visible objects appear multi-coloured in the day light	A type of nocturnal blindness	Treatment as described for *timira*. Application of medicinal *vartis* (plug-stick) and eye-salves, prepared with prescribed substances as described in *Utt*. 17, 9-11, 15
(vii) ***Gambhīra***, *Utt*. 1, 16; 7, 23	The front of the eye-ball contracts and appears to sink down; extreme pain is felt locally; caused by the aggravation of *vāyu*	—	Treatment as described for *vātaja abhiṣyanda*, and other diseases relating to the affection of pupil, like *timira* and *liṅganāśa*
Dūṣīviṣa-kalpa, *Ka*. 2, 17 Two types: *sthāvara* (vegetable poisons) and *jaṅgama* (animal poisons)	Looseness of stool, diarrhoea, discoloured skin, bad taste in the mouth, halitosis, unusual thirst, fainting fits, vertigo, vomiting, lassitude and confused speech, Later effects are falling off hair, extreme emaciation, drowsiness, heavy feeling in the limbs, aching sensation, indigestion, distaste for food, eruption of circular patches on the skin	Poisoning	Treatment as described under *sthāvaraviṣa-kalpa*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(i) *Sthāvaraviṣa-kalpa*, *Ka.* 2, 1-30 Seven types originating in roots, leaves, fruits flowers, bark, gum, milky exudations of plants; mineral poison (arsenic, etc.)	Symptoms vary with nature of the poison, but may consist of pain, delirium, loss of consciousness, difficult breathing, swelling, burning sensation, nausea, distension of the abdomen, headache, fetid breath, secretion of mucus in the mouth, foaming from the mouth, diarrhoea, cardiac pain, and fainting. Symptoms which develop later are : severe colic pain, yellow and swellen eyes, heaviness of the head, salivation, pain in the joints, loss of consciousness, and finally failure of respiration ; caused by vegetable and mineral poisons	Poisoning by vegetable and mineral substances	Treatment recommended in the order determined by the extent of the toxic action in the system ; a) emesis and drinking of cold water, (b) administration of antitoxic drugs suspended in honey and clarified butter, (c) purgation, (d) treatment of diarrhoea, if present, (e) removal of vitiated flesh and blood, (f) regular long-term treatment by prescribed medicinal compounds described in the text (*Ka.* 2, 26-28). Supervening symptoms like fever, hiccup, constipation, oedema, epileptic fits, cardiac weakness, ascites, loss of consciousness, uncontrollable shivering, etc. should be treated as in the cases of such diseases when encountered alone or in course of other diseases
(ii) *Jaṅgamaviṣa-kalpa*, *Ka.* 3	All the humours are simultaneously aggravated and show their specific symptoms. Respiration becomes very difficult and normal consciousness fails. Hot tears are shed due to extreme agony, the skin becomes discoloured, mouth is filled with foam and black stool may be passed. The circulation of blood may ultimately stop along with total stoppage of respiration, causing death	Poisoning due to venoms of animals, reptiles, insects, etc.	First aid consists of sprinkling with cold water, until complete wetting ; application of ligatures a little away and towards the heart and/or incision, bleeding, and cauterization at the site of the bite. The blood from the wound should be sucked out. The bitten persons should chew and spit out a cold of earth or a lump of clay, or bitter, the flesh of the poisonous which has bitten him. Specific treatments are des-

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(ii) *Jaṅgamaviṣa-kalpa* (Contd.)	Milder poisons give correspondingly milder symptoms	—	cribed under each class of animals whose venoms cause poisoning (see *jalatrāsa*, *lūtāviṣa-kalpa*, *mūṣika-kalpa*, *kīṭa-kalpa*, *sarpaviṣa-kalpa*)
Duṣṭavraṇa, *Ci.* 2, 64	Suppurated and running ulcerations and wounds. The usual symptoms of *vraṇa* in advanced stages are present. This conditions can be brought about by *meha* (urinary diseases) or *kuṣṭha* (chronic skin disease) apart from wound and injuries	Septic ulcers	Application of emetics, purgatives, nutritive enemas; restricted diet containing mainly bitter, pungent, and astringent foods; application of medicated aqueous or oily extracts and ointments of healing drugs
Galagaṇḍa, *Ni.* 11, 17-23; *Ci.* 18, 34-40 Three types : *vātaja*, *kaphaja*, and *medaja*	Swellings of various shapes and proportions around the neck, due to deranged *kapha* augmented by aggravated *vāyu*	Goitre	Venesection Specific treatments are described under the various types named
(i) *Vātaja galagaṇḍa*, *Ni.* 11, 18; *Ci.* 18, 34-36	Goitre with a network of dark veins on the surface and constant sensation of pricking pain. The swelling grows in size by accumulating fat, becomes deep brown in colour and rough to the touch; seldom forms any pus; caused by the aggravation of *vāyu*	—	Fomentation with vapours of decoction of tender leaves of plants with pacifying properties, milk, urine, oil, and meat The inflammation, remaining after the above treatment is treated with a special- medicated plaster, along with a course of medicine described (*Ci.* 18, 35-36)

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(ii) *Kaphaja galagaṇḍa*, *Ni*. 11, 20; *Ci*. 18, 37-39	Large goitre which slowly becomes hard, cold, and white, but without pain. There is seldom any suppuration except in very advanced cases	—	Use of special fomentation, poultice, plasters, errhines, emetics, and inhalations of *vairecanika-dhūma* (i.e. fumes of drugs of *virecanādi* group)
(iii) *Medaja galagaṇḍa*, *Ni*. 11, 21; *Ci*. 18, 40	Soft, glossy, pale coloured goitre with excessive itching but no pain; emits a bad smell. Slowly develops into a pendulous pear-shaped protuberance hanging by a short root. The face of the patient appears oily and his breathing full of sounds	—	Internal and external application of medicated oils Local venesection, followed by plastering with a plaster of special composition. A decoction of powdered drugs in cow's urine to be taken every morning Incision of the goitre, removal of all fleshy and fatty matters, or cauterization followed by bandaging as described in *Ci*. 18, 40
Gandhanāmnī, *Ni*. 13, 14; *Ci*: 20, 5	Large crop of small, painful boils spread over an wide area; caused by aggravated *pitta*	—	General treatment as described for *pittaja visarpa;* clarified butter boiled with desirable drugs is prescribed for local application in the suppurated stages
Garbhapāta, ***Ni*. 8, 7; *Śā*. 10, 45**	**Expulsion of a non-living foetus with a formed body and limbs after the fourth month of pregnancy. The warning symptoms are pain in the uterus, bladder, kidneys, and waist; bleeding may occur**	Miscarriage	The warning symptoms of a possible miscarriage should be treated by cold baths, local application of spray of cold water, anointment with medicated pastes, and by potions of tonic drugs with milk

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Garbhavicyūti, *Ni*. 8, 6; *Śā*. 10, 53	Destruction or expulsion of the foetus while still in its liquid form (upto the fourth month of pregnancy)	Abortion	Recuperation of the mother by use of restorative tonic described in the text
Gardabhī, *Ni*. 13, 12; *Ci*. 20, 5	Circular raised spots studded with vesicles; reddish and painful; caused by the actions of *vāyu* and *pitta*		Treatment as described for *gandhanāmnī*
Grahadoṣa, *Utt*. 27-37 Nine types: *skanda*, *skandāpasmāra*, *śakuni*, *revatī*, *putanā*, *andhaputanā*, *sītaputanā*, *mukhamaṇḍikā*, and *naigameśa* (*pitṛgraha*)	Suddenly developing diseases of children attributed to the evil effects of malignant extra terrestrial influences. The symptoms vary with the influence due to different causes	Infantile disorders	Propitiatory measures and chanting of incantations to appease the evil influence and ward off further danger External and internal medications specific to the various forms named The child should be kept in a clean, well-lighted, and guarded room; massage with old clarified butter
(i) *Skanda-grahadoṣa*, *Utt*. 27, 5; 28	The child's eyes are swollen and the face distorted; aversion to breast milk	A type of infantile disorder (Convulsion ? Cerebrospinal meningitis ? Encephalitis ?)	General treatment as for *grahadoṣa* External and internal use of drugs with *vāyu*-subduing properties Fumigation with mustard-seeds, other drugs, hairs of animals, or cast-off skin of a snake Use of special talismans

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(ii) *Skandāpasmāra-grahadoṣa* *Utt.* 27, 6; 29	The child's body emits a smell of blood; one of the eyes becomes fixed and stares with a frightened look. The child moans, rolls its eyes and tightly closes its fist, has convulsive jerks and periodic fits of fainting; foaming at the mouth, constipation, yawning, and passing of intestinal gases are other features	A type of infantile disorder (Basal meningitis ? Encephalitis ? Tetany ?)	General treatment as for *grahadoṣa* Massaging the body with medicated oils or with ointments; fumigation with burnt animal products Use of special talismans
(iii) *Śakuni-grahadoṣa, Utt.* 27, 7; 30	The patient (child) suffers from limpness of muscles, and emits a body odour which reminds of birds. Its body is covered with boils and suppurated ulcers	A type of infantile disorder (Chicken pox ? Erysipelas ?)	General treatment as for *grahadoṣa* Massaging with special preparations Use of medicated powders for healing *vraṇa* Special diet Fumigation as in No. (i) Use of special talismans
(iv) *Revatī-grahadoṣa, Utt.* 27, 8; 31	The patient's (child) face is suffused with blood, the body appears yellowish; there is fever and oral inflammation, the stool and urine are coloured green. The child frequently rubs its nose and ears		General treatment as for *grahadoṣa* Washing the body with decoction of special drugs and massage with medicated oils Application of plasters; fumigation with burnt bamboo barley and dung of owls and vultures Use of special talismans

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(v) *Putanā-grahadoṣa, Utt.* 27, 9; 32	The child suffers from looseness of limbs, disturbed sleep, loose stool, vomiting, and constant thirst. The skin has goose-flesh	—	General treatment as for *grahadoṣa*
			Anointing the body with special medicated oil
			Internal use of medicated *ghṛta*
			Fumigation with a special mixture
			Use of special talismans
(vi) *Andhaputanā-grahadoṣa Utt.* 27, 10; 33	The child suffers from lack of appetite, dysentery, cough, hiccup, vomiting, fever, discoloured skin, and oedema. It tries always to remain in a prone position	A type of infantile disorder (Measles ? Scarlet fever ?)	General treatment as described for *grahadoṣa*
			Washing the body with a decoction of drugs and then massaging with a special medicated oil
			Use of soothing plasters and cold application on the skin
			Fumigation and special amulet
(vii) *Śītaputanā-grahadoṣa, Utt* 27, 11; 34	The child has frequent fits of terror, shivers excessively, sleeps in a comatose state and constantly suffers from diarrhoea with streaks of blood	A type of infantile disorder (Cholera infantum ?)	General treatment as for *grahadoṣa*
			Use of a decoction of drugs to wash the body
			Anointing the body with a special medicinal oil
			Special fumigation and use of talismans

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(viii) *Mukhamaṇḍikā-doṣa*, *Utt.* 27, 12; 35 Also known as *vaktramaṇḍikā*	The child suffers from emaciation of the body and a glossy oedema of the face and extremities It is constantly in terror, has an unusually large appetite with a smell in urine and shows a net-work of veins on the stomach	A type of infantile disorder (Cirrhosis of liver ?)	General treatment as for *grahadoṣa* Use of decoction of drugs and medicinal oils for external use Special fumigation and use of charms
(ix) *Naigameśa-grahadoṣa*, *Utt.* 27, 13; 36	The child suffers from frothing in the mouth, vomiting, bending of the spine; it has a fixed upward stare, cries loudly and sometimes unconscious	A type of infantile disorder (Peritonitis ?)	General treatment as for *grahadoṣa* Use of decoction of drugs and medicinal oils for external use Special fumigation and use of charms
Grahaṇiroga, *Utt.* 40, 99, 107 Four types : *vātaja*, *pittaja*, *kaphaja*, and *tridoṣaja*	A disease affecting the upper end of the small intestine with the symptoms like, dull appetite, passing off undigested remanants of food with stool, constipation alternating with liquid stools, pain, fetid smell of stools, physical lassitude, cough, and intestinal sounds. In advanced cases oedema, emaciation, pain in joints, unusual hunger and thirst, acid eructations, bad taste in mouth and mild asthma are present	—	General treatment and diet as described for *atīsāra* Mild emetics and purgatives Medicinal mixtures and diet as described in *Utt.* 40, 107

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Granthi, *Ni.* 11, 2-7; *Ci.* 18, 2-3 Five types : *vātaja*, *pittaja*, *kaphaja*, *medaja*, and *śirāgranthi*	Round, firm, knotty, and elevated swellings in any portion of the body, caused by vitiation of the flesh, blood, fat, etc. and by deranged *kapha*	Cyst	Treatment described under specific diseases named. General treatment, common to all, follows directions given for *śopha*. The patient's health and general strength should be carefully guarded against any possible deterioration by use of special medicines and tonics
(i) *Vātaja granthi*, *Ni.* 11, 3; *Ci.* 18, 4	Inflamed glandular swelling of knotted shape, elongated or divided into various portions, of black colour, caused by deranged *vāyu*. On bursting or pricking, a bright red stream of blood is ejected	—	General treatment as described under *granthi* Fomentation, poultices, and plasters of pacifying type. Any pus formed should be lanced and drained, the wound washed with disinfecting decoctions. After treatment by special medicines as described in *Ci.* 18, 4
(ii) *Pittaja granthi*, *Ni.* 11, 4; *Ci.* 18, 5-6	Knotted and inflamed swelling of yellow to red colour, caused by deranged *pitta*. The swelling is hot to the touch, extremely painful, and on bursting exudes with copious flow of hot blood	—	General treatment as described under *granthi* Bleeding by application of leeches Drinking of medicines of pacifying properties. Application of hot plasters to localize the suppuration When fully suppurated, the pus is drained by lancing Healing medicines as prescribed in *Ci.* 18, 5-6

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iii) ***Kaphaja granthi***, *Ni.* 11, 5; *Ci.* 18, 7-9	Slightly discoloured knotty swelling, hard and compact like a stone, and cold to the touch, caused by deranged *kapha*. There is slight pain and excessive itching. The swelling develops at a very slow rate and exudes thick white pus on bursting		General treatment as described under *granthi* Purifying measures in the shape of emetics, purgatives, enemas, and blood-letting The affected part is fomented and firmly rubbed, and a medicinal plaster applied The swelling is opened even in the unsuppurated stage, and treated in the manner described for *sadyo-vraṇa* If suppurated, immediate incision and healing by preparations described in *Ci.* 18, 8-9
(iv) ***Medaja granthi***, *Ni.* 11, 6; *Ci.* 18, 10-11	Large and glossy swellings which periodically increase or decrease in size, caused by deranged fatty tissues. There is little pain but excessive itching on bursting; the swelling exudes a fatty liquid resembling clarified butter	Sebaceous cyst	General treatment as described under *granthi* Fomentation with special plasters, heated iron rods, heated shellac contained in a vessel, etc. Surgical incision of the *granthi* even if unsuppurated, and careful removal of the local fat, followed by cauterization of the wound If actually suppurated, incision followed by washing with cow's urine. Application of healing medicines as described in *Ci.* 18, 11

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(v) *Śirāgranthi, Ni.* 11, 7; *Ci.* 18	A knot by formation of ramified and hardened veins caused by prolonged muscular accretions, pressure, or straining. The swelling is practically painless, but may be fixed or shifting	Aneurism	Treatment as described under *granthi*
Gudabhraṃśa, Ni. 13, 45; *Ci.* 20, 31	Weakening of the sphincter muscles of the anus, leading to a prolapse; caused by excessive straining or urging while evacuating	Prolapse of the anus	The protruding part is fomented, lubricated, and gently reintroduced in place Bandaging by soft leather, leaving an orifice for evacuation Regular fomentation of the part The flesh of a mouse, boiled with milk and pacifying drugs should be taken regularly as internal medicine
Gulma, Ni. 9, 22; *Utt.* 42, 2-39 Five types: *vātaja, pittaja, kaphaja, triodoṣaja,* and *raktaja*	Lassitude, loss of appetite, pain and sounds in the alimentary canal; suppression of stools, urine, etc. are the first signs. Specific signs including cardiac pain, dryness of the throat, fever, copious perspiration, flushed appearance, bitter taste in the mouth, sensation of wetness in the body, are found in the *vātaja,- pittaja,* and *kaphaja* forms of the disease	Internal tumours or glandular swellings	Treatment by massage with medicinal oils, by purgation, and by application of enemas; anointment with medicated *ghṛta* Application of alkaline cautery, and blood-letting Use of medicinal plugs, sudation Special enemas and medicines described in *Utt.* 42, 12-39 Special diet rich in flesh foods and animal fats

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Raktaja gulma, Utt. 42, 10, 11	A swelling apparently looking like pregnancy develop in women whose menses are irregular or whose placenta has been retained after miscarriage or childbirth. The swelling develops with time but there is no movement inside the womb. The usual symptoms of *gulma* are present	Uterine tumour	General treatment as described for *gulma* Applications of a solution or clarified butter and lards of animals specified for relieving the congestion inside the uterus on the clot-formation by emulsive vaginal and uterine douches Inducing bleeding by special drugs and then treating the case of *asṛgdara* (menorrhagia) which develops
Halādhimantha, Utt. 6, 14	Loss of vision due to deranged *vāyu* incarcerated in the optic nerve	Blinding ophthalmia	Generally incurable. Palliative measures as that of *vātaja adhimantha*
Hikkā, Utt.* 50** **Five types: *annaja, yamalā, kṣudrā, gambhīrā,* and *mahatī	Derangement of the bodily *vāyu* resulting in periodic belching ; the periodicity and intensity of the symptoms differ with different forms of the disease. In serious cases the body becomes stiff, and there is total distaste for food and frequent sneezing	Hiccup, dyspnoea, asthmatic hiccup	Immediate measures are tickling the throat, frightening the patient, producing pain by pricking with needles, deep breathing, breath control (*prāṇāyāma*), and use of special errhines (*Utt.* 50 12) Vomiting and purging Use of special lambatives, fomentation, special medicines, medicinal grouts, etc. The diet should contain mainly of meat, acid fruits, salt, and clarified butter

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Hṛdgraha, *Ni.* 1, 14	Pain in the region of the heart, due to aggravation of *vāyu*	—	Application and intake of pacifying drugs which combat aggravated *vāyu*
Hṛdroga, *Utt.* 43 Four types: *vātaja*, *pittaja*, *kaphaja*, and *kṛmija*	Symptoms of this disease are specific to each type	Heart disease	Treatment is specific for each type
(i) *Vātaja hṛdroga*, *Utt.* 43, 4, 9	Recurrent pricking sensation and a crushing, piercing and unbearable pain in the cardiac region; burning sensation all over the body; caused by deranged *vāyu*	Rheumatic heart	Application of medicinal oils, emesis, purgation, and enemas Administration of cordial drugs, acid fruits, and dilute alcohol or tonic wines Diet of old rice of fine variety, butter, and flesh foods
(ii) *Pittaja hṛdroga*, *Utt.* 43, 4, 10	Deflated feeling and sucking pain in the cardiac region, intense thirst, burning sensation, fits of unconsciousness, copious perspiration, dryness of the mouth, and frothy eructations; caused by deranged *pitta*	—	Emesis and enemas Potion of medicated *ghṛta* Diet rich in butter and meat
(iii) *Kaphaja hṛdroga*, *Utt.* 43, 6, 11	Heavy feeling in the chest, unusual expectoration, running nose, aversion to food, numb feeling in the muscles, and a sweet taste in the mouth	—	Emesis with suitable drugs; use of enemas and oil-massage Special mixture of drugs described in *Utt.* 43, 11

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iv) *Kṛmija hṛdroga*, *Utt.* 43, 7, 8, 12	Parasitic infection of the heart leading to nausea, excessive salivation, piercing pain in the cardiac region, aversion to food, yellow tinge in eyes, oedema, emaciation, vertigo, and sense of exhaustion	—	Application and intake of medicated oil emulsion A diet limited to meat, curds, and fried sesamum is given for three days Purging and administration of anti-parasitic drugs A diet of barley water and light food
Indralupta, *Ni.* 13, 26; *Ci.* 20, 15 Also known as *rujyā* or *khālitya*	Falling of hair and development of baldness, due to the action of deranged blood and *kapha*, which fill up the pores of the hair roots and prevent fresh growth, or normal replacement, of hair	Alopecia	The bald part is massaged with medicated oils, fomented and bled by surface scratches followed by application of a special ointment described in *Ci.* 20, 15 General tonics are used for improving the general health
Indrāvṛddhā, *Ni.* 13, 9; *Ci.* 20, 5	Large-sized pimples appearing in circles in any part of the body ; caused by deranged *vāyu* and *pitta*	—	Treatment as described for *gandhanāmnī*
Irivellā, *Ni.* 13, 13; *Ci.* 20, 5 Also known as *irivellī*	A string of medium-sized boils extending along a line	—	As above
Jalagardabha, *Ni.* 13, 12; *Ci.* 20, 5	Thin and superficial swellings, which gradually increase in area with fever and burning sensation. Suppuration is rare	—	Treatment as described for *pittaja visarpa*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Jalatrāsa, *Ka.* 7, 7-8	Hydrophobia and other symptoms developing after the bite of a rabid dog, cat, jackal, hyena, wolf, bear, or tiger, etc. The bitten limb loses normal sensation; there is a copious flow of a very dark blood from the wound, and all symptoms of *śalya-viṣa* are present. The patient loses the faculty of humour and reason, and barks and howls	Rabies	The case is very often fatal, but rapid treatment may cause recovery. The seat of the bite is profusely bled to expel all vitiated blood, cauterized with boiling butter and given an anti-toxic mixture for immediate relief (*Ka.* 7, 8) Then the patient is kept in a cool chamber away from water, bathed and given a diet of milk and water. The anti-toxic mixture is repeated on every alternate day If the person has not been actually bitten but only scratched (marked by absence of bleeding), the part is rubbed to induce bleeding, and warm oil applied to the wound
Jatumaṇi, *Ni.* 13, 33; *Ci.* 20, 20	Glossy, circular and dark-brown birthmarks, flush with the skin of the surrounding area	Birth marks (Mole)	Scraping of the affected part by a scalpel until free bleeding takes place; followed by careful cauterization by alkali or fire; healing measures as described for *vraṇa*
Jihvāroga, *Ni.* 16, 34 Three types: *kaṇṭaka*, *alāsa*, and *upajihvikā*	Various symptoms of tongue diseases	—	Specific treatment as described for each type
(i) *Jihvākaṇṭaka*, *Ni.* 16, 34; *Ci.* 22, 29-31 Also known as *kaṇṭaka* Three types: *vātaja*, *pittaja*, and *kaphaja*	Discolouration and unusual growths on the tongue attended with pain, numbness, etc	Chronic superficial glossitis	Specific treatment as described for each type

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(a) *Vātaja kaṇṭaka, Ni.* 16, 35; *Ci.* 22, 30	Cracking, extreme roughness, and loss of sensation of the tongue due to the deranged *vāyu*	Cracked or fissured tongue	Treatment as described for *vātaja-oṣṭharoga* (*vide. oṣṭharoga*)
(b) *Pittaja kaṇṭaka, Ni.* 76, 35; *Ci.* 22, 30	Formation of furry, deep-red papilla on the tongue which turns yellowish in colour and has a burning sensation ; caused by deranged *pitta*	Red glazed tongue	The vitiated blood is relieved by vigorous rubbing with leaves having rough surfaces. Gargles, and errhines are prescribed with specific drugs as laid down in *Ci.* 22, 30
(c) *Kaphaja kaṇṭaka, Ni.* 16, 35; *Ci.* 22, 30	Formation of slender, fleshy, and pointed nodules on the surface of the tongue which becomes thick and inarticulate	Ichthyosis	Bleeding by scarification and followed by rubbing with powders of particular diet are also prescribed
(ii) *Alāsa, Ni.* 16, 36; *Ci.* 22, 47	Severe inflammatory swelling of the lower surface of the tongue which later develops numbnesses and immobility, and may become suppurated	Sublingula abscess	Considered to be an incurable disease, but treatment on the lines of *gala-śuṇḍika* may lead to some improvement
(iii) *Upajihvikā, Ni.* 16, 37; *Ci.* 22, 31	Formation of a cyst under the tongue along with salivation, burning and itching sensation	Ranula, or malignant growth under the tongue	The affected part is surgically scarified and treated with alkaline solutions. A course of gargles, errhines, and smoking mixtures are prescribed
Jvara, Utt. 39 Eight types: *vātaja, pittaja, kaphaja, tridoṣaja, dvandaja, viṣma, āgantuka,* and *gambhīra*	The onset of *jvara*, is marked by a sense of fatigue, aversion to physical effort, paleness of complexion, bad taste in mouth, aching limbs, lachrymation, yawning, heavy feeling, gooseflesh, averation to food, mental	Fever	General treatment includes light and restricted diet, internal cleansing of the system, special regimen of rest and conduct ; use of antiseptic, febrifuge, and tonic drugs ; use of milk, cereals, and meat in diet (*Utt.* 39, 47-67)

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Jvara (*Contd.*)	depression and sensation of cold		Special measures specific to each form of the disease
	When the disease has established itself there is stoppage of normal perspiration, rise of skin temperature, and hot breath		Prohibition of bathing or sprinkling water on the body, use of cosmetics and creams, oily foods, day-sleep, physical exercise, sexual intercourse, cold drings, and strong emetics and purgatives
			General treatment as described for *jvara*
(i) *Vātaja jvara*, *Utt.* 39, 11, 40, 75-81	Shivering, irregular rise of temperature, dryness of the mouth, insomnia, hot and dry skin, pain in head, chest and limbs, bad taste in mouth, constipation, colic pain, and also general symptoms of fever due to the derangement of *vāyu*	—	Potions of filtered boiled butter, which have been matured for some time, to be given as soon as first symptoms appear
			Special febrifuge mixtures and external medicines (*Utt.* 39, 75-81)
(ii) *Pittaja jvara*, *Utt.* 39, 12, 82-89	Usual symptoms of *jvara*, high temperature, diarrhoea, disturbed sleep, vomiting, oral inflammation, perspiration, delirium, fainting, burning sensation, pungent taste in mouth, slight jaundice, and vertigo due to the aggravation of *pitta*	—	General treatment as described for *jvara*
			Use of purgatives
			Special febrifuge mixtures and use of pastes and gargles (*Utt.* 39, 88-89)

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iii) *Kaphaja jvara*, *Utt.* 39, 13, 90-96	Heavy feeling in limbs, shivering, nausea, glossiness of eyes, gooseflesh, excessive sleep, sweet taste in mouth, low temperature, and indigestion, besides the usual symptoms of fever	—	General treatment as described for *jvara* Mild drugs given for emesis Use of special febrifuge mixture describe in *Utt.* 39, 90-94
(iv) *Tridoṣaja jvara*, *Utt.* 39, 14, 16, 103-109 Four types. *abhinyāsa*, *hataujasa*, *ojoniruddha*, and *sannyāsa*	Apart from usual symptoms of fever, insomnia, vertigo, difficult breathing, drowsy feeling, torpor, aversion to food, increased thirst, delirium, numbness, burning sensation and shivering, cardiac pain, partial insanity, blackish coating on teeth and tongue, pain in head and joints, dilation of the pupil, clouded eyes, ringing inside the ears, inflammation of nasal and oral channels, etc.	Acute fever (Typhoid?)	Extremely difficult to cure. General treatment as described for *jvara* Use of emetics, purgatives, and intake of potions of filtered clarified butter Special febrifuge mixtures as describ-ed in *Utt.* 39, 103-109
(a) *Abhinyāsajvara*, *Utt.* 39, 14-15	*Sannipātaja* or *tridoṣaja* fever with all symptoms plus extreme torpor and drowsiness with low or normal temperature		Treatment as described for *tridoṣaja jvara*
(b) *Hataujasajvara*, *Utt.* 39, 15-16	All symptoms of *tridoṣaja* fever, but with very low or normal skin temperature and greatly diminished vitality		As above

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(c) *Sannyāsajvara, Utt.* 39, 16	All symptoms described in *tridoṣaja* fever, but with low or normal temperature and a marked inertness of muscular movement	—	Treatment as described for *tridoṣaja jvara*
(d) *Ojoniruddhajvara, Utt.* 39, 17	All symptoms found in *tridoṣaja* fever, but with marked shivering, numbness of sensation, fits of unconsciousness, and delirium. The disease takes a turn for the better or worse on the twelfth day	—	As above
(v) *Dvandvaja jvara, Utt.* 39, 19-21 Three types: *vāta-pitta, vāta-śleṣma*, and *śleṣma-pitta*	Fever caused by the simultaneous derangement of two humours, the symptoms being specific to the three forms named	—	General treatment as described for *jvara*, as well as use of drugs and measures to counteract the humours which have deranged Use of tepid water for drinking, avoiding cold water
(a) *Vāta-pitta-jvara, Utt.* 39, 19, 101-102	Usual symptoms of *jvara*, frequent yawning, abdominal distension, fits of unconsciousness, shivering, pain in the joints, gradual emaciation, delirium and high skin temperature	—	As above Special febrifuge mixture as described in *Utt.* 39, 101-102
(b) *Vāta-śleṣma-jvara, Utt.* 39 20, 95-96	Apart from usual symptoms of *jvara* bodily pain, cough, expectoration, coryza, shivering, sensation of cold, lassitude, aversion to food, etc.	—	As in *dvandaja jvara* Special febrifuge mixture as described in *Utt.* 39, 95-96

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(c) *Śleṣma-pittajvara*, *Utt.* 39, 21, 97-100	Apart from usual symptoms of *jvara* copious perspiration followed by cold, vertigo, cough, lassitude, and nausea	—	Treatment as described for *dvandvaja jvara* Use of special febrifuge mixture
(vi) *Viṣamajvara*, *Utt.* 39, 30, 32, 110-128 Six types: *santata*, *anyedyuḥ*, *tṛtīyaka*, *caturthaka*, *pralepaka*, and *viparyāya*	Repeated or recurrent fits of fever due to the presence of toxic or morbid substances in the system, or due to psychological causes like strong grief, etc., or due to intake of wrong articles of diet. The symptoms and periodicity of recurrence differ with different forms of the disease. They run their appointed time until the morbid matters are consumed by the fever and eliminated from the system	Recurrent or irregular fever	Usual treatment for *jvara* gives relief from painful and troublesome system and conserves the vitality of the body until the system cures itself Use of special febrifuge mixtures, tonics, etc., also give immediate relief and longterm benefits (*Utt.* 39, 110-20)
(a) *Santatajvara*, *Utt.* 39, 30	Continuous fever with a high skin temperature and daily periodicity; all symptoms of *viṣama jvara* are present. The fever lasts seven, ten or twelve days, with two distinct aggravations in the course of every day and night	Remittant fever (Paratyphoid ?)	Treatment as described for *viṣamajvara*
(b) *Anyeduḥjvara*, *Utt.* 39, 31	A type of *viṣama jvara* with all usual symptoms. Fever occurs every day followed by remission	—	As above

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(c) *Tṛtīyakajvara*, *Utt.* 39, 25	Fevers recurring on every third day, all usual symptoms of *viṣamajvara* being present	—	Treatment as described for *viṣamajvara*
(d) *Caturthakajvara*, *Utt.* 39, 25	Fevers recurring on every fourth day, all symptoms of *viṣamajvara* being present	—	,,
(e) *Pralepakajvara*, *Utt.* 39, 22	Slow fever with a daily periodicity in which there is a gradual loss of bodily elements producing emaciation, weakness, loss of vitality and ultimately death, as in cases of *śoṣa* (consumption)	—	,,
(f) *Viparyāyajvara*, *Utt.* 39, 23	All symptoms of *viṣamajvara* with sudden and irregular attacks of high fever, which however has no specially weakening effect on the system, caused by the deranged bodily *doṣas* being simultaneously located in two or four specific seats of the deranged bodily ***kapha***	—	Generally hard to cure Treatment as described for *viṣamajvara*
(vii) *Āgantukajvara*, *Utt.* 39, 34-36, 73-74	Fever due to injuries, poisons, smells (like hay fever), strong passions, and secondary effects of other diseases. The symptoms are: darkening of the face, burning sensations, cardiac pain, diarrhoea, aversion to food, unusual thirst, pain in joints, extreme weakness, sneezing, drowsiness, delirium, gradual emaciation, etc.	—	General treatment as described for *jvara*. Specific measures to counteract the wound, infection, etc.

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(viii) *Gambhīrajvara*, *Utt.* 39, 37-40	Usual symptoms of *jvara* ; extreme burning sensation, excessive thirst, constipation, laboured breathing, cough, paleness of complexion, dullness of sense perceptions, mental depressions, etc.	—	Treatment as described generally for *jvara* and special measures described for *tridoṣaja jvara*
Kacchapikā, *Ni.* 13, 7; *Ci.* 20, 4	A group of five or six hard, elevated, nodular eruptions, arranged in the shape of tortoise ; appear on any part of the body ; caused by deranged *kapha* and *vāyu*	—	Treatment as described for *pāṣāṇagardabha*
Kacchū, *Ni.* 5, 10; *Ci.* 20, 10-11	Small pustules with protruding vescicles over an area of the skin, with itching and sensation of burning ; mainly confined to the legs, hands, and buttocks	A type of eczema (scabies ?)	General treatment as described under *kuṣṭha* Special ointments and plasters described in *Ci.* 20, 11
Kadara, *Ni.* 13, 23; *Ci.* 20, 14	Hard, painful, knotted cysts of a conical shape, exuding secretion forming on the soles of the feet due to occlusion of thorns or gravels inside the dermis	—	Affected area should be surgically scraped off and cauterized with heated oil
Kakṣā, *Ni.* 13, 13; *Ci.* 20, 5	Eruption of dark and painful boils in the region of the armpits and surrounding areas, caused by deranged *pitta*	Acute lymphadenitis of the axillary glands (?)	Treatment as described for *pittaja visarpa*, and *gandhanāmnī*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Kālikā, Sū. 16, 4	Fever, burning pain and swelling of the earlobes, due to faulty perforation of earlobes, causing injury to the local veins	—	Plastering the affected part with medicated paste containing castor-seeds and red dyes
Kandaja viṣakalpa, Ka. 2, 14, 24-25	Various symptoms found in different types are :	Poisoning by alkaloids present in plant-bulbs	Treatment as described in *sthāvara-viṣakalpa*
Twelve types of bulb-poisons: ***kālakūṭa, vatsanābha, saṃṣaṭa, pālaka, kardama, varāṭuka, mustaka, śṛṅgī-viṣa, puṇḍarīka, mūlaka, halāhala, mahāviṣa,*** and ***karkaṭa***	Numbness, shivering, total loss of sensation, paralysis of the neck, yellow colour of eyes and excretions, acute constipation, loss of speech, diarrhoea, enlargement of the abdomen, discoloured skin, vomiting, hiccup, oedema, difficult breathing, intense cardiac pain, and loss of control over the voluntary muscles. Bulb poisons are generally heating, drying, sharp, penetrating, quick in action, permeating, and unabsorbable		
Kaṇṭharoga, Ni. 16, 48	Various symptoms of throat and laryngal diseases	Throat diseases	Treatment described under specific diseases named
Fourteen types: *rohiṇī* (five types), ***kaṇṭhaśāluka, adhijihvā, valaya, balāsa, ekavṛnda, vṛnda, śataghnī, gilāyu, galavidradhi, galaugha, svaraghna, māṃsatāna,*** and ***kaṇṭhavidārī***			

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(i) *Rohiṇī*, *Ni.* 16, 49-54; *Ci.* 22, 37, 49 Five types: *vātaja*, *pittaja*, *kaphaja*, *sannipātaja*, and *raktaja*	Rapid growth of fleshy papilla inside the throat, which gradually obstruct the channel of the throat and generally prove fatal. The disease shows specific symptoms particularly in the vegetation, growth and other associated features of the fleshy nodules in cases of aggravation of the single and combined actions of the three bodily humours	Diptherial inflammation of the throat	Blood-letting in case of *vātaja* type Application of medicated gurgles, fumes, errhines, and emesis; rubbing the part with salts or medicated powders as described in *Ci.* 22, 37 The above are only palliative measures, as the disease is incurable
(ii) *Kaṇṭhaśāluka*, *Ni.* 16, 55; *Ci.* 22, 38	Hard, rough, tumour of the shape and size of a plum with a constant bristling sensation	Adenoids	Treatment as described for *tuṇḍikerī* Diet should be restricted to a single cup of barley water daily
(iii) *Adhijihvā*, *Ni.* 16, 56; *Śā.* 8, 50; *Ci.* 22, 38	A small swelling over the root of th tongue suppurating gradually	Epiglottitis	An incurable disease; palliative measures include venesection by opening the vein of the tongue, and the measures described for *upajihvā*
(iv) *Valaya*, *Ni.* 16, 57; *Ci.* 22, 48	A ring-shaped swelling at the upper end of the windpipe, which gradually obstructs the breath		An incurable disease, but palliative measures as in *galavidradhi* may be tried
(v) *Balāsa*, *Ni.* 16, 57; *Ci.* 22, 48	A painful swelling inside the throat which gradually obstructs the breath	Throat tumour	An incurable disease; may be tried by the treatment as described for *galaśuṇḍikā*
(vi) *Ekavṛnda*, *Ni.* 16, 59; *Ci.* 22, 38	A circular, soft, raised, inflamed swelling in the opening of the throat with itching and slight suppuration	Adenoidal swelling ?	Blood-letting by application of leeches Purifying and healing measures as described for [illegible]

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(vii) *Vṛnda*, *Ni.* 16, 60; *Ci.* 22, 48	A round prominent swelling inside the throat, accompanied by burning sensation and high fever	—	Palliative measures on the lines of *galavidradhi* can be applied, but the disease is incurable
(viii) *Śataghnī*, *Ni.* 16, 61; *Ci.* 22, 48	A hard cystoid growth with fleshy outcrops in the inner passage of the throat, causing extreme pain and discomfort	—	An incurable disease, but palliative measures on the lines of *galavidradhi* may yield some results
(ix) *Gilāyu*, *Ni.* 16, 62, *Ci.* 22, 39 Also known as *śilāyu*	A small hard and moderately painful glandular formation inside the throat, causing a constant sensation of the throat as being choked by a lump of food	A type of throat tumour	Treatment by surgery to remove the morbid growth Antiseptic and healing measures as described for *vidradhi*
(x) *Galaugha*, *Ni.* 16, 64; *Ci.* 22, 37-42, 48	A large swelling inside the throat ; complete obstruction of all the passages and the bronchial tube, attended with high fever	A type of throat abscess	The disease is incurable. Treatment as in general throat disease
(xi) *Galavidradhi*, *Ni.* 16, 63; *Ci.* 22, 42	Inflammation and swelling of the entire lining of the throat with pain and ulceration	—	Treatment by surgery in order to drain the pus formed Antiseptic and healing treatment as described for *vidradhi*
(xii) *Svaraghna*, *Ni.* 16, 65; *Ci.* 22, 48	Choking and paralysis of the throat, with stertorous breathing, hoarseness of voice and dry sensation	Aphonia	Palliative measures on the lines of throat diseases as may help, but the disease is incurable

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(xiii) *Māṃsatāna*, *Ni.* 16, 66; *Ci.* 22, 48	Formation of a pendulous, growing, and painful tumour inside the throat, which gradually obstructs the passage	Throat cancer ?	An incurable disease which always proves fatal ; but palliative measures on the lines of *galavidradhi* may yield some results
(xiv) *Kaṇṭhavidārī*, *Ni.* 16, 67; *Ci.* 22, 48	A copper-coloured swelling on the surface of the throat, marked by extreme pricking and burning sensation ; the flesh of the affected part gradually becomes putrid and highly ulcerated	—	As above
Karṇaroga, *Utt.* 20, 21 Fifteen types: *karṇaśūla*, *praṇāda*, *vādhirya*, *karṇakṣveḍa*, *karṇasrāva*, *karṇakaṇḍu*, *karṇagūtha*, *kṛmikarṇa karṇapratīnāha*, *vidradhi* (two types), *karṇapāka*, *pūtikarṇa*, *karṇārśas* (four types), *karṇārbuda* (seven types), and *karṇaśopha* (four types)	Various symptoms of diseases of the ear	—	General treatment consists of nutritive measures, like intake of specially prepared potions and pill ; strict control of some personal habits Specific treatment as described for each type
(i) *Karṇaśūla*, *Ni.* 1, 69; *Śā.* 8, 50; *Utt.* 20 2; 21, 3-26 Four types: *vātaja*, *pittaja*, *kaphajha*, and *raktaja*	Violent pain inside the ear, extending to the head, temples, cheeks, and neck. The ear-drums are the seat of the pain	Ear-ache; otitis	General treatment as described for *vātavyādhi* with local venesection in aggravated cases Fomentation by medicated vapours applied through a pipe; poultice of warm boiled flesh of fish or birds; application of warm medicinal ear-drops

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
karṇaśūla (*Contd.*)			Local application of cow's urine, medicated *ghṛta*, oils and powders, etc. Diet should be rich in milk and butter and should contain minimum of cereals
(ii) *Praṇāda*. *Utt*. 20. 4: 21. 3-26	False sense of hearing of buzzing, ringing and other sounds due to the derangement of local *vāyu*	—	Treatment as directed for *karṇaśūla*
(iii) *Vādhiryya*. *Ni*. 1. 68: *Utt*. 20. 5; 21. 26-30	Total or nearly total deafness, caused by blocking of the channels carrying sound	Deafness	General treatment as described for *karṇaśūla* Use of special ear-drops described in *Utt*. 21, 27-30 General methods described for *vāta-vyādhi*
(iv) *Karṇakṣveḍa*. *Utt*. 20. 6: 21. 3. 43	A continuous sense of hearing of a whistling sound inside the ears caused by exposure to cold, excessive labour, and wasting diseases	—	Treatment as described for *karṇaśūla*. Application of warm mustard oil
(v) *Karṇasrāva*. *Utt*. 20. 7: 21. 31-38	Secretion and discharge of pus from ears, caused by injuries, long submersion in water, or inner abscess inside the ears	—	General treatment as described for *karṇaśūla*. Use of errhines, fumigation, and washing liquids. Filling up the cavity of the ears with medicated powders. Use of specially prepared ear-drops

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(vi) *Karṇakaṇḍu, Utt.* 20, 8; 21, 45	Constant and extreme itching sensations in the ear	Ear-itch	Fumigation of inner ear by burning special drugs, using a pipe Use of emetics, medicated smokes, errhines, and drugs which subdue *kapha*
(vii) *Karṇagūtha, Utt.* 20, 9; 21, 44	Excessive accumulation of dried waxy secretion inside the ear, blocking the passage and affecting hearing	Formation of hardened ear-wax	Use of warm mustard oil as ear-drops
(viii) *Krimikarṇa, Utt.* 20, 11; 21, 41, 42	Growth of local parasites inside the ears, which impairs the faculty of hearing, causing temporary deafness	—	Fumigation by vermifuge drugs; use of special ear-drops Use of emetics and medicated gurgles (*Utt.* 21, 42)
(ix) *Karṇapratīnāha, Utt.* 20, 10; 21, 46	Accumulation of caked and hardened ear-wax causing headache, hemicrania, and running ears	—	Application of medicated oils and fomentation Use of errhines Aggravated humour should be pacified by suitable drugs
(x) *Karṇavidradhi, Utt.* 20, 12; 21, 43-44 (Two types: not described in the text)	Choking sensation and burning pain inside the ear, and red or reddish-yellow discharges, etc. indicating an abscess or suppurated swelling inside the ear	—	Treatment as described for *vidradhi* Fomentation and extraction of filthy matter by means of a probe

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(xi) *Karṇapāka, Utt.* 20, 13; 21, 47-48	A boil inside the ears getting suppurated and causing blocking and putrefaction inside the ears	—	Local cleaning by suitable horn instruments. General treatment as described for *pittaja visarpa*
(xii) *Pūtikarṇaka, Utt.* 20, 14; 21, 40	A slow discharge of badly-smelling pus from inside the air passage, accompanied by pain	—	General treatment as described for *karṇaśūla* Use of ear-drops and ear-salves of special compositions
(xiii) *Karṇārśas, Utt.* 20, 15 (Four types: not described in the text)	Same as that described in *arśas*	Polypoid growths in the ear	Treatment as described for as *arśas*
(xiv) *Karṇārbuda, Utt.* 20, 15 (Seven types: not described in the text)	Same as that described in *arbuda*	Tumours in ear	Treatment as described for *arbuda*
(xv) *Karṇaśopha, Utt.* 20, 14	Description and symptoms as stated in *śopha*	Swelling of the ear	Same as *śopha*
Kāśa, Utt. 52, 13-32 Five types: *vātaja, pittaja, kaphaja, kṣataja,* and *kṣayaja*	Caused by derangement of *vāyu* by breathing impure or dust-laden air, excessive physical labour, too much dry or fried foods taken regularly, accidental choking,, etc. The condition begins with itching of the throat, difficulty in swallowing, changed voice, lack of appetite and then develops into pain in the lungs,	Chronic cough	The patient is given medicines in the form of linctus, lambatives with honey, sugar and clarified butter, mixtures, tonic wines, medicated *ghṛta*, and medicated smoking mixtures (*Utt.* 52, 3-32) Specific treatment as described under each type

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
	coughing, expectorations, sallow complexion, weak and hoarse voice, loss of strength and vigour, Ulceration of the lungs may give rise to spitting of blood		
(i) *Vātaja kāśa, Utt.* 52, 5-6, 20	Aching pain in the region of heart, temples, head, stomach and the sides, dry and frequent cough, pale face, weak and hoarse voice, and loss of bodily strength and vigour; caused by the derangement of *vāyu*	—	General treatment as described under *kāśa* Uses of oleaginous substances and *vāyu*-subduing drugs are specially recommended: specially reforms of poultices, fomentation, enematas, etc.
(ii) *Pittaja kāśa, Utt.* 52, 5, 7, 24	Burning sensation in the region of heart, fever, dryness and bitter taste in the mouth, thirst, yellow and pungent expectoration, etc. are the general symptoms in case of *pittaja kāśa*	—	Treatment as described under *kṣataja kāśa*
(iii) *Kaphaja kāśa, Utt.* 52, 5, 8, 21	Sticky sense in the mouth, physical lassitude, headache, aversion to food, sense of heaviness in the body, itching, frequent fits of coughs, and thick mucous expectorations; caused by the derangement of *kapha*	—	General treatment as described under *kāśa*. Medicinal drugs as described in *Utt.* 52, 21 prove beneficial to cough due to derangement of *kapha*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iv) *Kṣataja kāśa*, *Utt.* 52, 9-10, 25-28	Chronic cough accompanied by blood in sputum and haemoptysis from inside the chest, caused by over exertion, carrying excessive weights, external injuries, sexual excesses, forcibly controlling elephants, horses, etc. At first there is a dry cough, but bleeding occurs later. Great pain and pricking sensation is felt inside the chest. Pain in the joints, fever, asthma, and loss of voice also occur	Haemoptysis from lungs with chronic cough	General treatment as described for *kāśa* Special medicines and lambatives as described in *Utt.* 52, 25-28
(v) *Kṣayaja kāśa*, *Utt.* 52, 11-12, 23-28	Chronic cough present in wasting disease or consumption marked by rapid emaciation, muscular cramps, burning sensation, fainting, loss of vitality, blood and pus present in the sputum	Cough due to consumptive diseases	Treatment as described for *kāśa* Special medicines and lambatives described in *Utt.* 52, 23-28
Kilāsa, *Ni.* 5, 12; *Ci.* 9	Circular, rough and deep-red patches of dermatitis with scales which peel off on rubbing. The colour may be pink or white in the last two forms. There is thickening of skin and itching sensation. The patches of dermatitis may gradually extend over the entire area of the body. Classed with *kuṣṭha*; caused by the derangement of three humours	—	General treatment as described for *kuṣṭha*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Kīṭa-kalpa, *Ka.* 8, 2, 27-42	Symptoms developing after bites of poisonous insects, centipedes, frogs, etc. The seat of bites becomes discoloured, and there is fiery pain. Other possible symptoms are: fever, goose-flesh, vomiting, extreme thirst, burning sensation in the body, partial loss of consciousness, yawning, shivering, difficult breathing, eruptions, swelling, formation of red and raised circular patches and even sometimes the symptoms of snake-bite	Poisoning by venomous bites	First aid and general treatment in the lines of those described for snake-bites, though the physician can make some judicious changes Special treatments for specific cases described in *Ka.* 8, 27-42
Krimigranthi, *Utt.* 2, 4-5; 8, 6; 14, 5	A cyst or swelling, accompanied by itching sensation at the junction of the sclerotic and inner lining of the eyelids due to parasitic infection	—	Treatment by surgical incision followed by fomentation Application of specially prepared eye-salves
Krimiroga, *Utt.* 54 Twenty different types distributed in three major divisions : *purīsaja* (seven types), *kaphaja* (six types), and *raktaja* (seven types)	Infection and germination of extremely small (invisible) parasites are indicated by various symptoms, which are specific for the parasites growing in excreta, mucus, and blood. Fever, pale complexion, pain, cardiac troubles, vertigo, general weakness, lack of appetite, and diarrhoea are common symptoms	Parasitic infections	Ascertaining the nature of the parasites present and taking measures to destroy their colony in the body Treatment with medicated oil, purgation, and applications of nutritive enema Application of medicated collyriums, errhines and anti-congestants for parasites inhabiting the head, heart, mouth, and nostrils Special medicines and preparations for internal use as described in *Utt.* 54. 12-15

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Krimiroga, (*Contd.*)			Special diet of bitter and pungent substances and decoction of drugs in milk. The diet should not include untreated milk, cooked meat, clarified butter, curds, green leaves, acid and sweet substances, and cold drinks and food
(i) *Purīṣaja krimi*, *Utt.* 54, 3-5, 13-15 Seven species: *ajavā*, *vijavā*, *kipyā*, *cipyā*, *gaṇḍupadā*, *cūrava* and *dvimukhā*	The presence of these parasites in the rectal passage are indicated by local pain, dull appetite, sallow complexion, distented abdomen, loss of strength, cardiac troubles, diarrhoea, and sometimes local itching. These parasites are caused by excessive intake of *māṣa* pulses, cakes, salt, green leaves, and sweet substances	—	Treatment as described for *krimiroga* Special medicines and application as described in *Utt.* 54, 15
(ii) *Kaphaja krimi*, *Utt.* 54, 6-7, 15 Six species: *darbhapuṣpā*, *mahāpuṣpā*, *pralūnā*, *cipiṭā*, *pipīlikā*, and *dāruṇā*	The presence of these white parasites which can destroy or damage the eyes, palate, inner ears, and bone-marrow are known by headache, cardiac troubles, catarrh, and vomiting, apart from usual symptoms of *krimiroga*. These parasites are caused by excessive intake of *māṣa* pulse, flesh, foods, sweet substances, milk, curds, and fermented liquors	—	Treatment as described for *purīṣaja-krimi*

mented liquors

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iii) *Raktaja krimi*, *Utt.* 54, 8-9 Seven species: *keśadā*, *romadā*, *nakhadā*, *dantakā*, *kikkiśā*, *kuṣṭhajā*, and *parisarpā*	The presence of these invisible dark red or black parasites in vitiated blood vessels and in the skin of different parts of the body are indicated by symptoms which are peculiar to vitiated blood. These parasites are caused by the excessive intake of green leaves, wrongly cooked foods, and indigestible articles of food	—	Treatment as described for *krimiroga*
Kṛṣṇagataroga, *Utt.* 5 Four types: *savraṇa-śukra*, *avraṇa-śukra*, *pākātyaya* or *akṣipāka*, and *ajakā*	Various affections in the region of choroid including the iris	—	Treatment as described for each type
(i) *Savraṇa-śukra*, *Utt.* 5, 2-3; 12, 17-21	A small ulcer on the part surrounding the iris, attended with intense pain, constant pricking sensation, and a slow warm discharge	—	General treatment as described for *raktaja adhimantha* Use of surface-abrasive powders, special collyriums, eye-drops, etc. as described in *Utt.* 12, 19-21
(ii) *Avraṇa-śukra*, *Utt.* 5, 5; 12, 17-21	Non-ulcerated whitish film covering the black portion of the eye attended with lachrymation and slight pain; thick, deep and long-standing film; mobile film covered with net work of veins and flesh, obstructing the vision and marked with reddish tint in the peripheri, with or without a crop of speck over the iris	—	The first two symptoms only are open to permanent cure; palliative treatments only are possible for the other two General treatment as described for *raktaja abhiṣyanda* Use of surface-abrasive powders, special collyriums, eye drops, etc.

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iii) *Akṣipāka*, *Śā.* 8, 51; Two types: *aśopha* and *saśopha* *Utt.* 5, 6; 6, 13; 8, 8; 12, 24	Itching, formation of mucus over eyes, lachrymation, redness, burning sensation, and a gradual clouding of the black portion of the eyes, developing into a milky film over the eyes, and sometimes painful suppuration; caused from chronic *abhiṣyanda*	Ophthalmitis	Application of medicated oil, and fomentation Venesection of the veins of the nose, forehead, and outer corners of the eyes Use of special eye-washes, eye-drops, eye-salves and collyrium
(a) *Aśopha-akṣipāka*, *Utt.* 6, 13; 8, 7; 12, 24	Slow suppuration of the eye-ball, attended with itching, copious mucous discharge, redness and burning sensation in the eye, heavy feeling, and horripilation	—	Treatment as described for *akṣipāka*
(b) *Saśopha-akṣipāka*, *Utt.* 6, 13; 8, 7; 11, 10; 12, 24	Swelling and slow suppuration of the eye-ball, attended with itching copious mucous secretion, redness and burning sensation of the eye, heavy feeling, and horripilation	—	As above Use of special collyrium (*Utt.* 11, 10)
(iv) *Ajakā*, *Utt.* 5, 7; 12, 23	A reddish growth protruding from the inner portions and coming out of the black portions of the eye (choroid); attended with pain and discharge of a thin fluid	—	Fine punctures are made on both sides of the cornea by surgical needles and the thin fluid discharge completely drained The punctures are filled with dried and powdered beef mixed with clarified butter

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iv) *Ajakā* (*Contd*)			Use of special scarifying powders for removing the affected surface layers
Kukūṇaka, ***Utt***. 19, 8-10, 12-13	A condition which attacks infants due to deranged breast milk. The inner linings of the eyelids are irritated and inflamed, causing constant itching, and the child is unable to bear any light and frequently rubs the eyes and face		Local bleeding by application of leeches
			Scraping the eyes with clean leaves with rough surfaces
			The mother or wet-nurse should be treated for vitiated breast milk (*stanyadoṣa*)
			Specially prepared emetics are given to the child to induce vomiting
			Special eye-drops and collyriums described in *Utt*. 19, 12-13 should be applied
Kunakha, ***Ni***. 13, 16; 20, 6-7 Also known as ***kulīna***	Rough, dry, and blackened finger-nails aused by injuries	Onychogryphosis	Treatment as described for *cipya* (*cippa*)
Kuṣṭha, ***Ni***. 5, 1-2; ***Ci***. 9 Eighteen types distributed in two major divisions: ***mahākuṣṭha***, (major affections—seven types) and ***kṣudrakuṣṭha*** (minor affections—eleven types)	Affections of the skin by aggravating *vāyu* jointly with *pitta* and *kapha* entering into the network of capillaries which cover the entire surface of the body	Skin diseases	Treatment described under the two main types, *mahākuṣṭha* and *kṣudrakuṣṭha*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Kuṣṭha (Contd.)			Regular use of catechu and its various preparations is highly recommended for persons suffering from all types of skin diseases
(i) *Mahākuṣṭha*, *Ni.* 5, 4, 9; *Ci.* 10 Seven types: *aruṇa*, *audumbara*, *ṛṣyajihvaka*, *kapāla*, *kākanaka*, *puṇḍarīka*, and *dadru*	Extensive and major affections of the skin, due to excessive amount of deranged *vāyu*, *pitta* and *kapha* entering and lodging below the skin surface. Contraction and bursting of the skin, along with sharp pain and loss of sensibility to touch and general lassitude of muscles	A type of leprosy (Elephantiasis graeocrum)	General treatment as described under *kṣudrakuṣṭha* and *duṣṭavraṇa* The aggravating complications like urinary diseases, excessive fat, general oedema, etc. are first treated A large number of internal medicines and external applications for immediate and long-term treatment are described in the text (*Ci.* 10, 3-18)
(a) *Aruṇa*, *Ni.* 5, 7; *Ci.* 10 *Ci.* 10	A deep red-coloured, extensive but thin dermal inflammation, with piercing pain but loss of sensibility to touch in the affected area		As above
(b) *Audumbara*, *Ni.* 5, 7; *Ci.* 10	Extensive but thin dermal swelling of deep brown colour with burning pain. The dermatitis develops rapidly, suppurates, and the surface becomes broken		
(c) *Ṛṣyajihva*, *Ni.* 5, 7-8; *Ci.* 10	Extensive dermal swelling of pink colour and rough serrated surface with burning pain. The dermatitis increases rapidly, suppurates, and the surface becomes broken		

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(d) *Kapala*, *Ni.* 5, 7-8; *Ci.* 9	Extensive dermal swelling of the colours of black and baked clay with burning pain. The dermatitis grows rapidly, suppuration and splitting of the skin surface follow	—	As in *mahākuṣṭha*
(e) *Kākaṇaka*, *Ni.* 5, 7; *Ci.* 9	Extensive dermal swelling of dark red to black colour with burning pain. The dermatitis grows rapidly, suppurates, and the surface becomes broken	—	As above
(f) *Puṇḍarīka*, *Ni.* 5, 8; *Ci.* 9	Raised, circular, and extensive patches of dermatitis of the colour of lotus petals, overgrown with pustules. The dermatitis develops very slowly with little pain	—	General treatment as described under *mahākuṣṭha* Special treatment as described for *śvitra*
(g) *Dadru*, *Ni.* 5, 8; *Ci.* 9	Raised, circular patches of dermatitis with coppery or faintly bluish colour, over-grown with small pustules. The dermititis develops very slowly, and is painless	Ringworm	General treatment as described for *kṣudrakuṣṭha* Use of a medicinal plaster containing many ingredients described in the text (*Ci.* 9, 12)
(ii) ***Kṣudrakuṣṭha***, ***Ni.*** **5, 5; *Ci.* 9** **Eleven types:** ***sthūlāruṣka***, ***mahākuṣṭha***, ***ekakuṣṭha***, ***carmadala***, ***visarpa***, ***parisarpa***, ***sidhma***, ***vicarcikā***, ***kiṭima***, ***pāmā***, **and** ***rakasā***	Various symptoms are described for the different types, but in all types the tissues beneath the skin are affected	Acute and chronic skin diseases of miscellaneous types	General treatment: strict regulation, avoiding flesh foods, milk and curds, oils, some pulses, cane-sugar and sweets, acids, etc; diets, and internal preparations described in the text (*Ci.* 9, 3)

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(ii) *Kṣudrakuṣṭha* (*Contd.*)			The system is cleansed by emesis and purgatives. Many medicinal applications and internal medicines for immediate and long term use are described in the text for obtaining radical cure
(a) *Sthūlāruṣka*, *Ni.* 5, 10; *Ci.* 9	Patches of thickened dermatitis over the elbow or knee joints, overgrown with small hard pustules	A type of eczema	Treatment as described for *kṣudrakuṣṭha* and *duṣṭavraṇa*
(b) *Mahākuṣṭha*, *Ni.* 5, 10; *Ci.* 9	In this type the skin contracts, and bursts with piercing pain; the affected part loses all sensibility to touch with a general sense of lassitude in the limbs.	——	As above
(c) *Ekakuṣṭha*, *Ni.* 5, 10; *Ci.* 9	The skin assumes a reddish-black colour	Ichthyosis	"
(d) *Carmadala*, *Ni.* 5, 10; *Ci.* 9	Itching pain, and thickening of the skin of the palms and soles of the feet		"
(e) *Visarpa*, *Ni.* 5, 10; *Ci.* 9	This type of *kṣudrakuṣṭha* affects in succession the organic principles of skin, blood and flesh, and steadily extends all over the body; attended with burning sensation, restlessness, suppuration and a piercing pain, and loss of consciousness	——	Treatment as described under *kuṣṭha*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(f) *Parisarpa*, *Ni*. 5, 10; *Ci*. 9	A number of fleshy nodules which gradually extend over extensive areas of the body	—	Treatment as described for *kṣudrakuṣṭha* and *duṣṭavraṇa*
(g) *Sidhma*, *Ni*. 5, 10; *Ci*. 9	Thin and white-coloured dermatitis with itching but no other symptoms; generally confined to the upper part of the body	Pityriasis versicolour	As above
(h) *Vicarcikā*, *Ni*. 5, 10; *Śā*. 8, 27; *Ci*. 20, 11	Dermatitis with sharp pain and itching, the skin of the hands and feet being dry and cracked	Psoriasis	Local venesection General treatment as described for *kṣudrakuṣṭha* and *duṣṭavraṇa* Special treatment by ointments and plasters as described in *Ci*. 20, 11
(i) *Kiṭima*, *Ni*. 5, 10; *Ci*. 9	Small pustules and pimples localized over an area of the skin, with itching and burning sensation	Keloid tumours	Treatment as described for *kṣudrakuṣṭha* and *duṣṭavraṇa* Special plasters and ointments as described in *Ci*. 20, 11
(j) *Pāma*, *Ni*. 5, 10; *Ci*. 20, 11	Dry pimples all over the body with excessive itching due to deranged *kapha*	Dry eczema	Treatment as described for *kṣudrakuṣṭha* and *duṣṭavraṇa*
(k) *Rakasā*, *Ni*. 5, 10	Round thick dark-coloured tumours with a slimy oozing secretion	Dry erythema	As above

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Liṅgārśas, *Ni.* 2, 15	Ulceration, constant itching, and growth of fine papilla or warts on the margin or surface of the glans penis. The local tissues progressively degenerate with discharge of bloody and slimy matters, finally destroying the male gland and its functions.	Fig warts or condylomatous growths about the genitals	
Lohitikā, *Sū.* 16, 4	Congestion and numbness of the muscles of the neck, tetanus, headache, and ear-ache due to faulty perforations of the ear-lobes	—	Plastering the affected part with a medicated paste after thorough cleansing
Lūtāviṣa-kalpa, *Ka.* 8, 43-65	The symptoms of poisoning by bites of poisonous spiders are slow to develop and difficult to diagnose. The first signs are itching sensation, urticaria followed by discolouration, fever, swelling, aching pain in the head and joints and seat of the bite, dysentery, and aggravation of all three humours, eruptions, circular reddish patches, putrefaction, vomiting, loss of consciousness, etc., may also occur	Poisoning by spider venom	General treatment as described for *kīṭa-kalpa*, and specific medicines described in the text Surgical incision of the bitten part, cauterization by hot metal implements until the patient is unable to bear, plastering with special compounds and regular use of healing medicines described in *Ka.* 8 65, etc. If the case is aggravated through neglect, or suppurated treatment as for snake-bite (*sarpaviṣa-kalpa*) should be carried out

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Madhumeha, *Ni.* 6, 33; *Ci.* 12, 3-11; 13	A case of chronic *prameha* afflicted with carbuncles and marked by extreme lassitude; difficult to cure	Diabetes	Anointment of the body with oil; enemas, and gargling; diet restricted to meat, milk, butter, oils and animal fats, acid fruits, salts, certain spices and the urine of a she-goat. Sugar and sweet articles are strictly tabboed
			Treatment of secondary symptoms like carbuncles, etc., by surgery
			Use of special medicines described in the text for immediate relief and long term cure (*Ci.* 12, 3-11; 13)
Majjājāta vidradhi, *Ni.* 9, 26; *Ci.* 16, 24-25	A suppurated and deep-seated abscess which has attacked the bone and penetrated upto the marrow. Pain, swelling, local suppuration and fever are present	Deep-seated bone abscess	The disease is very difficult to cure except in early stages. The affected area should first be massaged with medicated oils and then fomented; bleeding is recommended next
			When suppuration is visible from outside, surgical operation aimed at thorough cleaning of the affected bone and other tissues is performed. Purifying and antiseptic decoctions are used
			Healing by methods described under *vraṇa* and by special medicines described in *Ci.* 16, 25

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Maraka. *Sū*. 6, 17-19	Epidemic diseases which simultaneously attack the majority of the population of any area	Epidemic diseases	Cleansing of the body and mind by religious measures, penances, self-control, etc; migration to a healthy and unaffected locality
Marmarikā, *Sū*. 16, 4	Pain, inflammation, and nodular growths on the earlobe, due to faulty perforations	—	Plastering the affected part with a medicated paste containing castor oil and red dye
Maśaka or *Maṣaka*, *Ni*. 13, 34; *Ci*. 20, 20	Hard, painless and very dark-coloured eruptions on the skin, in the shape of small-sized lentils	Lichen	Treatment as described for *jatumaṇi*
Masūrikā. *Ni*. 13, 29; *Ci*. 20, 19	Brown or copper-coloured eruptions all over the body and inside the cavity of the mouth, attended with pain, fever, and burning sensation	Small pox (?)	A long term treatment as described under *kuṣṭha* and *tridoṣaja visarpa*
Mūḍhagarbha, *Ni*. 8, 1-8; *Ci*. 15, 5, 12-18 Eight different types described depending upon the condition and posture of the foetus just before delivery	Difficult delivery, protracted delivery or false presentation due to obstruction of the rectal *vāyu* by spasmodic contraction; attended with intense pain, tympanitis, uraemia, bleeding, etc.	Difficult and complicated; or still-birth	The manipulations, necessary for delivery in a case of false presentation, are described in *Ci*. 15, 5. Surgical instruments are to be used only in the last resort and when the foetus is presumed to be dead. In the latter case foetus is destroyed surgically as soon as possible and pulled out in pieces, in the order to save the life of the mother The placenta, in such cases, should be expelled manually . After-measures, medicines, tonics, etc. for the mother are described in *Ci*. 15, 12-18

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Mūrcchā, *Utt.* 46, 2-10 Also known as *moha*	The affected person loses all awareness of the external world and sensations of pleasure, pain, etc., for the duration of the condition. The first symptoms are: sense of oppression in the cardiac region, lassitude, loss of muscular movement and sensory perceptions. Later symtoms are stiffening of the body, fixed stare, and very slow and deep breathing	Faint, fit	Sprinkling of cold water, pouring cold water over the head and face, fanning, cold plasters and compresses, and cooling measures in general When the patient is roused, cold drinks and cordials, medicated *ghṛta*, fruit juices, a light diet of boiled cereals and meat soup Medical treatment by regular use of medicines described In case of repeated attacks, use of strong emetics, medicinal errhines, and suitable medicines taken as described in *Utt.* 46, 9, 10
Mūṣika-kalpa, *Ka.* 2, 30; 6, 3-5	Vitiation of blood by rat-poisoning. The symptoms may be: inflammation and swelling in circular patches, pustules, rapidly increasing inflammation, excessive pain, fever, epileptic fits, difficult breathing, shivering, goose-flesh, rapidly increasing anaemia, copious salivation, nausea, blood vomiting, diarrhoea, numbness of muscles, torpor, etc.	Rat-poisoning	First-aid consists of cauterization of the seat of the bite by boiling butter; blood-letting, incision of the seat of the bite, inducing vomiting by taking of an anti-toxic preparations of drugs and cow's urine which neutralizes and expels the poison as vomit Use of special remedies as described in *Ka.* 6, 3-5 If symptoms persist, then treatment as indicated for *dūṣīviṣa*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Mūtrāghāta, *Utt.* 58 Twelve types: *vātakuṇḍalikā*, *vātāṣṭhīlā* *vātavasti*, *mūtrātīta*, *mūtrajaṭhara*, *mūtrotsaṅga*, *mūtrakṣaya*, *mūtragranthi*, *mūtraśukra*, *uṣṇavāta*, *mūtraukasāda* (two types)	Symptoms of various diseases causing total suppression of urine	Total suppression of urine	Many types of external applications and internal medications to be used regularly, are recommended for this condition External methods used are soothing application, massage with ointments, and urethral douches Internal preparations include lambatives, medicinal decoctions, medicated *ghṛtas*, tonic wines, etc., described in *Utt.* 58, 15-24
(i) *Vātakuṇḍalikā*, *Utt.* 58, 3	Due to decreased fluid, or no fluid intake, or voluntary suppression of urine confined within the bladder, resulting in scanty and painful urination. The urine is said to move in circular eddy current inside the bladder	—	Treatment as described for *mūtrāghāta*
(ii) *Vātāṣṭhīlā*, *Utt.* 58, 4	Aggravation of deranged *vāyu* gives rise to a hard lumpy tumour, between the bladder and the rectum causing suppression of urine, stool, flatus, abdominal distension and bowl pain	—	Treatment as described for *vātavyādhi* and for *mūtrāghāta*
(iii) *Vātavasti*, *Utt.* 58, 5	Forced repression of the urinary urge causes closure of the sphincture muscles, retention of urine, and local pain	—	Treatment as described for *mūtrāghāta*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	,, Treatment in brief
(iv) *Mūtrātīta, Utt.* 58, 6	Complete or nearly complete suppression of urination, caused by forced suppression of the urinary urge. The urine issues in painful and intermittent dribbles only on straining	—	Treatment as described for *mutrāghāta*
(v) ***Mūtrajaṭhara, Utt.*** **58, 7**	Retention of urine, due to voluntary suppression, causing gradual distention of the bladder, and intense pain. The stricture muscles close of their own accord and cannot be controlled	—	As above
(vi) ***Mūtrotsaṅga, Utt.*** **58, 8**	A very slow flow of urine which runs down the outside parts in drops mixed with blood, sometimes with pain	—	,,
(vii) ***Mūtrakṣaya, Utt.*** **58, 9**	Due to desiccation and lack of fluid intake, there is local burning sensation, pain, and very scanty formation of urine in the bladder	—	,,
(viii) ***Mūtragranthi, Utt.*** **58, 10**	Formation of a cyst inside the bladder, indicated by pain; the symptoms of urinary calculi (*aśmarī*), and of complete or nearly complete uraemia	—	,,

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(ix) *Mūtraśukra, Utt.* 58, 11	Sexual intercourse with an unrelieved bladder causes semen to pass out or urine, which appears like suspension of white flocculent particles	—	Treatment as described for *mūtrāghātā*
(x) *Uṣṇavāta, Utt.* 58, 12	Extreme physical exertion, fatigue, long journey on foot and prolonged exposure to the sun can cause a painful flow of dark yellow or blood-streaked urine or a discharge of blood along with a burning sensation inside the bladder	—	As above
(xi) *Mautrakṣāda, Utt.* 58, 2, 14 Two types: *pittaja* and *kaphaja*	Painful urination with a thick flow and leaving a sediment; caused by aggravation of two humours, *pitta* and *kapha*	—	,,
(a) *Pittaja mūtraukasāda, Utt.* 58, 12	A thick but transparent and clear flow of urine with yellow colour and a burning sensation on micturition. The urine, if allowed to stand, precipitates a yellow powder, caused by deranged *pitta*	—	,,
(b) *Kaphaja mūtraukasāda, Utt.* 58, 13, 14-24	A thick, soapy, and whitish flow of urine without pain or burning sensation. The urine deposits a white sediment on standing	—	,,

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Mūtrakṛcchra, *Utt.* 58, 15-16; 59 Eight types : *vātaja*, *pittaja*, *kaphaja*, *sannipātaja*, *aśmarīja* (urinary stone), *śarkarāja* (urinary gravel), *abhighātaja* (traumatic), and *purīṣaja* (induced by constipation)	Specific symptoms vary with each of the diseases named, but difficult and painful micturition is common	Painful and difficult urination; strangury	General treatment aimed at subduing the humour actually aggravated; intake of specially prepared fermented liquors as described in *Utt.* 58, 15-16 Special measures for the specific forms of the diseases
(i) *Vātaja mūtrakṛcchra*, *Utt*: 59, 3, 11	Scanty and intermittent flow of urine with pain in the urethra, scrotum, and bladder due to the derangement of *vāyu*	—	Internal use or urethral injection of a medicated *ghṛta* containing a large number of a specified drugs, vegetable oils, lard, and clarified butter (*Utt.* 59, 11)
(ii) *Pittaja mūtrakṛcchra*, *Utt.* 59, 4, 13-14	Emission of hot, dark-yellow (sometimes stained with blood) urine with an intense burning sensation; caused by deranged *pitta*	—	Internal use or urethral injection of a medicated *ghṛta* Enema and local massage by medicated oils Purgation with warm milk containing cane-sugar or grape juice Use of medicated oils and gruels internally (*Utt.* 59, 14)
(iii) *Kaphaja mūtrakṛcchra*, *Utt.* 59, 5, 13	Heavy feeling inside the scrotum, penis, and bladder; emission of unusually cold, oily urine of an opalescent shade; goose-flesh on the skin during micturition	—	Treatment as described for *pittaja mūtrakṛcchra*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(vi) ***Sannipātaja mūtrakṛcchra***, *Utt.* 59, 6, 15	Shivering and local burning sensation during urination, frequent and painful emission of coloured urine, and sometimes loss of consciousness due to the concerted action of the three *doṣas*		A judicious selection of the measures recommended for the *vātaja* and *pittaja* types of *mūtrakṛcchra* A special sweetened wine containing medicinal drugs described in *Utt.* 59, 15
(v) ***Aśmarīja mūtrakṛcchra***, *Utt.* 59, 9	Obstruction of the urinary passage by urinary stones, blocking the passage, leading to painful and scanty urination or total uraemia	Urinary stone formation	Treatment as described for *aśmarī*
(vi) ***Śarkarāja mūtrakṛcchra***, *Utt.* 59, 10	Obstruction of the urinary outlet of the bladder by urinary calculi, leading to painful and scanty urination ; cardiac troubles, shivering, cramps in the loins, diminution of digestive fire, and fainting fits are the other associated symptoms	—	As in *aśmarīja*
(vii) *Abhighātaja mūtrakṛcchra*, *Utt.* 59, 7-8, 16	Complete uraemia due to stricture of the urethral opening by external injuries, or local wounds. The condition is painful and serious	Traumatic uraemia	Treatment as described for *sadyovraṇa*
(viii) *Purīṣaja mūtrakṛcchra*, *Utt.* 59, 2, 7, 16	Acute constipation can cause simultaneous uraemia, distension of the abdomen, cramps, and pain	—	Baths, fomentations, massage, cooling applications, enema, and internal use of soothing and *vāyu*-subduing drugs

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Nāḍīvraṇa, *Ni.* 10, 9-10; *Ci.* 17, 9-23 Five types : *vātaja, pittaja, kaphaja, dvandaja* or *tridoṣaja*, and *śalyaja*	The pus of an abscess finding new internal channels in the absence of any outer opening or surgical relief. Large number of channels and cavities may develop, full of pus in each case	Sinus formation with pus	General treatment consists of a special form of surgical cauterization for weak and delicate persons. The course of the sinus is ascertained and a needle threaded with a string soaked in strong alkali is threaded through the sinus, followed by healing measures ; specific treatment as described for each type
(i) *Vātaja nāḍīvraṇa*, *Ni.* 10, 11; *Ci.* 17, 9	Pus-filled sinus formations with uneven narrow openings, with aching pain and frothy secretions which increase at night; caused by deranged *vāyu*	—	Treatment as described for *nadīvraṇa*
(ii) *Pittaja nāḍīvraṇa*, *Ni.* 10, 12; *Ci.* 17, 12-13	Pus-filled sinus formations with thick yellow discharges which increase during day-time; caused by deranged *pitta*. Fever, local heat, piercing pain, and a sense of lassitude are present	—	Use of specially prepared poultice before operation. The after treatment with plaster and oil prepared from prescribed drugs
(iii) *Kaphaja nāḍīvraṇa*, *Ni.* 10, 12; *Ci.* 17, 14	Sinus formations filled with thick white pus which oozes out at night. There is a slight pain with local hardness and itching	—	Operation of the sinus preceded by poulticing and followed by the use of plaster and application of decoction of prescribed drugs
(iv) *Dvandaja nāḍīvraṇa*, *Ni.* 10, 13; *Ci.* 17, 9-23	A pus-filled sinus caused by the simultaneous derangement of any two humours, each contributing its characteristic symptoms	—	General treatment as described for *nāḍīvraṇa* and for the *vātaja*, *pittaja*, and *kaphaja* types of *nāḍīvraṇa*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
or *Tridoṣaja nāḍīvraṇa*, *Ni.* 10, 14-15	Push-filled sinus formations with pain, discharges, burning sensation, fever, difficult breathing and fainting fits; caused by the simultaneous action of three deranged *doṣas*		Difficult to cure, but treatment as described for *nāḍīvraṇa* may be applied for temporary relief
(v) *Śalyaja nāḍīvraṇa*, *Ni.* 10, 16; 17, 15	Pus-filled sinus formations caused by foreign matters like dirt, splinters, and bones, lodged inside the body. The sinus channels tend to burst open the skin along their paths. There is constant pain and intermittent exudations of bloody and frothy discharges	—	Extraction of foreign matters by an incision into the sinus. Cleansing of the channel, and purification of ulcer with paste of prescribed substances. Use of a special oil for speedy healing up
Nāsāroga, *Utt.* 22 Fifteen types : *apināsā*, *pūtināsa*, *nāsāpāka*, *śoṇitapitta*, *pūya śiṇita*, *kṣavathu*, *bhraṃśathu*, *dīpta*, *nāsānāha*, *nāsāparisrāva*, *nāsāśoṣa*, *nāsārśas* (four types), *nāsāśopha* (four types), *nāsārbuda* (seven types), *nāsāpratiśyā* (five types)	Various symptoms of diseases of nose	—	Treatment as described for each type

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(i) *Apināsā*, *Utt.* 22, 3; 23, 2-3	Obstruction and blocking of the nostrils by dried deposits of dirty mucus, causes difficulty of breathing and burning sensation inside the nostrils	Catarrhal congestion	Massage with medicated oils followed by local fomentation. Internal cleansing by emetics and purgatives with restricted diet; use of boiled water only for drinking. Intake of special drugs cooked in mustard oil, and use of nasal drops. Smoking of medicated smoking mixtures
(ii) *Pūtināsa*, *Utt.* 22, 4; 23, 2-3	Foetid breath due to congestion inside the throat and at the root of the palate	Halitosis	As above
(iii) *Nāsāpāka*, *Utt.* 22, 5; 23, 4	Formation of small pimples and local inflammation inside the nostrils, attended with slight discharges and foetid breath	—	Application of local wash and plasters prepared from clarified butter and milky exudations of medicinal plants External and internal use of drugs which pacify aggravated *pitta*
(iv) *Śoṇitapitta*, *Utt.* 22, 6 (see under *raktapitta*)	—	—	—
(v) *Pūyarakta*, *Utt.* 22, 7; 23, 5	Discharge of blood-streaked pus through the nostrils, due to humoral aggravation or external injuries	—	Treatment on the lines described for *nāḍīvraṇa* with some variations as described in *Utt.* 23, 5
(vi) *Kṣavathu*, *Utt.* 22, 8 23, 6	Violent and chronic sneezing caused by irritations, exposure to cold and sun, or taking pungent substances	Violent sneezing	Fumigation through pipes, using drugs which relieve congestion of the head Fomentation of the head with *vāyu*-subduing drugs

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(vii) *Bhraṃśathu*, *Utt.* 22, 10; 23, 6	Chronic sneezing accompanied by discharge of liquefied mucous deposits	—	As in *kṣavathu*
(viii) *Dīpta*, *Utt.* 22, 11; 23, 7	Unusually warm breath, with burning sensation inside the nostrils	—	Application of *pitta*-subduing measures, and all cooling remedies and the drugs of sweet tastes are prescribed
(ix) *Nāsāpratīnāha*, *Utt.* 22, 12; 23, 8 Also known as *nāsānāha*	Blocking of the nostrils by mucus attended with a sense of high pressure inside the nostrils	Congestion of the nasal passage	Use of large quantities of fatty and oily emulsions, taken internally Fumigation and use of drugs which effect a catharsis of the head
(x) *Nāsāparisrāva*, *Utt.* 22, 13; 23, 9 Also known as *nāsāsrāva*	Constant discharge of thin, slightly hazy fluid from the nostrils, which increases at night	Running nose (catarrh)	Fumigation and use of powdered snuffs of medicinal properties for removing local congestion and for drying up the discharges
(xi) *Nāsāpariśoṣa*, *Utt.* 22, 14; 23, 10-11 Also known as *nāsāśoṣa*	Difficulty of respiration, sense of dryness inside the nostrils caused by drying up of thick mucus	Coryza	Poultices of lizard flesh given warm Local application of fresh butter and vegetable oils Massage, fomentation, and fumigation Diet should contain mainly clarified butter, meat soups, etc.
(xii) *Nāsārśas*, *Utt.* 22, 15	Growth of polyps inside the nose; caused by the action of three deranged humours separately and jointly	—	General treatment as described for *arśas*, with necessary variations

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(xiii) *Nāsāśopha*, *Utt.* 23, 15, 18	Swelling with slight inflammation inside the nose	—	General treatment as described for *śopha*
(xiv) *Nāsārbuda*, *Utt.* 22, 15, 18	Nasal tumours or unsuppurated boils inside the nostrils	—	General treatment as described for *arbuda*
(vx) *Pratiśyāya*, *Utt.* 24, 2-27 Five types: *Uātaja*, *pittaja*, *kaphaja*, *sannipātaja*, and *raktaja*	Heavy feeling in the head, sneezing, general aching of the limbs; different symptoms for different variations of the disease listed above. If neglected, this disease may lead to deafness, loss of vision, loss of sense of smell, and other permanent damage	Coryza	Fresh ginger taken with milk to thicken the nasal discharge Application of errhines, fomentation, purgatives, enema, inhalation of smoke, and medicated gargles Internal administration of clarified butter, milk, acid fruits, etc. Specific treatment for different types The patient should be warmly covered from head to feet, kept inside a warm room; cold baths, cold drinks, new wine, and dry foods should be avoided
(a) *Vātaja pratiśyāya*, *Utt.* 24, 5, 19	Obstruction and stuffy feeling inside the nose, dryness of the throat, hoarseness of voice, excessive sneezing, and bad taste in the mouth apart from usual symptoms of *pratiśyāya*; caused by deranged *vāyu*	—	General treatment as described for *pratiśyāya* Special measures recommended for *ardita* and intake of medicated *ghṛta* containing salts and other drugs

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(b) *Pittaja pratiśyāya*, *Utt.* 24, 6, 20	Apart from usual symptoms of *pratiśyāya*, hot and yellow secretion from the nose, hot skin, emaciation and sallow complexion, due to aggravation of *pitta*	—	General treatment as described for *pratiśyāya* Use of special gargles and errhines Intake of clarified butter cooked with special drugs (*Utt.* 24, 20)
(c) *Kaphaja pratiśyāya*, *Utt.* 24, 7, 21	Apart from usual symptoms of *pratiśyāya*, a chronic state of catarrhal discharge, pale skin, swollen eyes, heavy feeling in head, itching sensation inside throat and palate	—	General treatment as described for *pratiśyāya* Local application and intake of medicated oils and emulsion followed by emesis Smoking of special medicated mixtures
(d) *Sannipātaja pratiśyāya*, *Utt.* 24, 8, 23-25 Also known as *tridoṣaja pratiśyāya*	A mixture of the general symptoms of *pratiśyāya* with the specific symptoms of *vātaja*, *pittaja*, and *kaphaja* types. A characteristic feature is the sudden disappearance and sudden reappearance of such symptoms at frequent intervals	—	General treatment as described for *pratiśyāya* Special medicines as described in *Utt.* 24, 23-25
(e) *Raktaja pratiśyāya*, *Utt.* 24, 9, 20	Apart from usual symptoms of *pratiśyāya*, reddened and swollen eyes, discharge of blood from nose, pain in the chest, foetid smell of breath, and loss of the faculty of smelling, due to vitiation of blood	—	General treatment as described for *pratiśyāya* Special treatment as described for *pittaja* variety

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Naṣṭarakta, *Śā*. 2, 22	Temporary or prolonged disappearance of the menstrual periods	Amenorrhoea	Dieting is recommended for restoration of normal flow ; advised items of diet are: fish, pulses, wines, light fermented liquors, sesamum seeds or oil, cow's urine, whey and curds of cow's milk, and bitter vegetables
Nayanābhighāta, *Utt*. 19, 1-7	Redness, swelling, and excessive by pain due to injury in the eyes by blows, accidents, exposure to heat, glare, smoke or excessive fomentation. In extreme cases the eyeball may become loose, sunken, dislocated or smashed, unusual dilatation of pupils, wrong vision, etc.	Ocular injuries	General treatment consists of soothing measures and measures described for *pittaja* and *raktaja abhiṣyanda*. The treatment should commence as early as possible Also medicinal errhines, plasters, sprinkling, fomentation, and other soothing measures, like use of cool, sweet, and fatty drugs are prescribed Proper medical treatment or surgical treatment for grave injuries or permanent damage as on the lines indicated in *Utt*. 19, 7
Netradoṣa, *Utt*. 1, 15 Seventy-six types: ten caused by *vāyu*, ten by *pitta*, thirteen by *kapha*, sixteen by deranged blood and two by external injuries, and twenty-five by concerted action of three humours	Described under specific diseases viz. *kṛṣṇagataroga*, *sandhigataroga*, *śuklagataroga*, *vartmagataroga*	Eye diseases and affection	Described under specific diseases

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Nirastamuṣka, Ci. 2, 49-50	Bursting or escape of the testicles from the scrotal sac from injuries	—	First-aid as described in *sadyovraṇa*, followed by sprinkling and washing of the legs and eyes with cold water The testicles should be reset in their proper place and sewed up with the seam outside (exposed). The scrotum should be bandaged in the form of a sac. No lubrications with oily applications are to be applied to the wound are to be applied to the wound which should be kept quite dry A mechanism for restraining any-movement of the middle part of the body of the patient is fixed in position Healing application containing copper sulphate and plant drugs
Niruddhaguda, Ni. 13, 42; *Ci.* 20, 26, 27 Also known as *sanniruddhaguda*	Stricture or complete obstruction of the opening of the rectum in the anus, causing difficulty or stoppage of evacuation	—	The actual root causes of the disease (i.e. the aggravated humours) should be treated first An incision is made to open the anus, a tube inserted for natural evacuation, and healing measures carried out as described in *sadyovraṇa*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Niruddhaprakāśa, *Ni.* 13, 40; *Ci.* 20, 26	Partial or complete obstruction of the urethral opening by the smallness of the opening of the skin of the prepuce, which is tight over the glans and cannot be moved back. The urine comes out in thin jets or is totally stopped, and there is some pain	Phimosis	The urine should be voided through a fine catheter, made of metal, etc. and lubricated for introduction The part should be lubricated with special oil or pig lard The size and thickness of the catheter tube should be gradually increased to dilate the constricted passage An incision should be made to allow withdrawal of the prepuce and then treated as in *sadyovraṇa*
Nyaccha, *Ni.* 13, 36; *Ci.* 20, 21	Pale or brown circular patches visible from birth ; painless and confined to certain areas	A type of capillary angiomata or naevi	Treatment as described for *vyaṅga*
Niṣkrānta-antra, *Ci.* 2, 39-46	Protrusion of the intestines through wounds in undamaged state or with perforations	Protrusion of intestines by accidental wounds	Careful manual replacement of the intestines in their proper position, if perforations or severance of the intestinal walls are found. Large black ants are made to bite and firmly grip together the separated ends. The bodies of the ants are now clipped off, leaving the head, and the intestines reset. If the protruding parts are dirty, they should be rinsed, washed with milk, lubricated with clarified butter before resetting

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Niṣkrānta-antra (*Contd.*)			The throat of the patient should be rubbed with fingers to relieve pressure inside and help reintroduction. The external wound may be enlarged for the same purpose. Other treatment as described in *sadyovraṇa*
Oṣṭharoga, *Ni.* 16, 3-8 ; *Ci.* 22, 2-8 Also known as *oṣṭhakopa* Eight types : *vātaja*, *pittaja*, *kaphaja*, *sānnipātika*, *raktaja*, *māṃsaja*, *medaja*, and *abhighātaja* (i.e. traumatic)	Dryness, loss of sensitiveness, discoloration, pain and other symptoms affecting the lips; growth of eruptions, pustules and boils over, or contiguous to, the mouth. Bleeding and local swelling in some cases	Diseases affecting the lips	Application of ointments, fomentations, and poultices for pacification of deranged *vāyu*, Application of powders of plants prescribed (*Ci.* 22, 2) in case of the disease caused by aggravated *vāyu* Bleeding by application of leeches, application of antiseptic and healing drugs as described under *pittaja vidradhi* where the disease is caused from aggravation and vitiation of *pitta* and blood respectively If suppurated, an incision should be made, the morbid matter cleaned; the wound purified and cauterized. Application of ointment described in *Ci.* 22, 8. This is followed in case of *medaja* type of the disease; also in case of traumatic origin

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
			Blood-letting followed by the use of medicated errhines, fumigations, gargles, and paste as described in *Ci.* 22, 6 in case of deranged *kapha*
Pādadārika, *Ni.* 13, 22; *Śā.* 8, 27; *Ci.* 20, 14	External dryness on the soles of the feet (pedestrian habit), which aggravates local *vāyu*	—	Local venesection. Fomentation and application of ointment and a special plaster as described in *Ci.* 20, 12 General treatment as described under *vātavyādhi*
Padminīkaṇṭaka, *Ni.* 13, 31; *Ci.* 20, 23	Circular dark patches of eruptions, overgrown with stiff and pointed papilla due to the deranged condition of the *vāyu* and *kapha*	—	Emesis; and treatment with margosa nut extract and clarified butter; local application of margosa and *āragbadha* plants
Paliroga, *Ci.* 25, 1-17 Five types : *paripoṭa*, *utpāta*, *unmantha*, *duhkhavardhana*, and *parilehī*	Discoloration, painful swelling, suppuration, and formation of boils on the earlobes, due to forcible pulling, blows, etc. are the general symptoms and causes of the five varieties. If untreated they destroy not only the outer ears but also damage the sense of hearing	—	General treatment by ointments, fomentation, washes, plasters, poultices, and blood-letting Special medicines prescribed for specific forms of the disease, described in *Ci.* 25, 10-17

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Palita, Ni. 13, 30; *Ci.* 25, 18-19	Premature greyness or silvering of hair before the age of senile decay; caused by the action of heat and deranged *pitta* on the scalp	Premature canities	Treatment by regular use of special hair oils described in *Ci.* 25, 18-19
Pānājīrṇa, Utt. 47, 13, 27	A case of *pānātyaya* (acute intoxication) complicated with acute indigestion, abdominal distension, sour taste in the mouth, repeated vomiting, and impairment of digestion	—	Inducement of immediate vomiting by drugs Special medicines and palatable diet described in *Utt.* 47, 27
Pānātyaya, Utt. 47, 11, 16-23 Four types : *vātaja, pittaja, śleṣmaja,* and *tridoṣaja*	Acute alcoholic intoxication marked by hiccup, fever, vomiting, shivering, tremor, cramp of the sides, cough and vertigo; pain and numbness in limbs, palpitation of the heart, cardiac pain, and headache in case of *vātaja* type; copious perspiration, delirium, dry mouth, burning sensation, fainting fits, loss of consciousness, sallow features, and dull eyes in case of *pittaja* type; vomiting, shivering, and waterbrash in case of *kaphaja* type	Acute alcoholic intoxication	Treatment by means of slightly alcoholic drinks, special medicines, and a special diet different in the four types of *pānātyaya* are described in *Utt.* 47, 16-23
Panasikā, Ni. 13, 10; *Ci* 20, 4	Externally painful, bulb-shaped eruptions covering the back of the outer ears; caused by deranged *vāyu* and *kapha*	—	Treatment as described for *andhālajī*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Pānavibhrama, *Utt.* 47, 14, 28	A case of *paramada* (chronic alcoholism) with the added features of acute cardiac pain, continuous nausea, fever, fuming eructations, excessive salivation, epileptic fits, and aversion to all food and drink	A type of chronic alcoholism	Treatment by means of cordial prepared with prescribed drugs as described in *Utt.* 47, 28
Pāṇḍuroga, *Utt.* 44 Seven types: *vātaja, kaphaja, sannipātaja, kāmala, kumbhakāmala,* and *lāgharaka* or *alasaka*	Preliminary signs are cracked skin, increased salivation, lassitude, swelling of eyelids, yellow colour of stool and urine, and indigestion. In advanced cases the skin also becomes yellow, and other symptoms are specific for the different types of the disease Supervening symptoms are aversion to food, thirst, vomiting, fever, headache, anorexia, swelling of the neck, weakness, epileptic fits, and cardiac pain	Jaundice	Massage and internal administration of matured clarified butter Emesis and purgation with suitable drugs Special medicines described in *Utt.* 44, 14-27 A diet of special drugs, honey, cow's urine, alkalis, butter, cereals, and meat taken regularly
(i) *Vātaja pāṇḍuroga*, *Utt.* 44, 5	The disease is marked by the blackish appearance of the eyes, and the skin with prominent appearance of black-coloured vein; black colour of the stool and of the urine, blackness of the face and of the finger-nails and the other symptoms characteristic of the deranged bodily *vāyu*	—	Treatment as described under *pāṇḍuroga*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(ii) *Pittaja pāṇḍuroga, Utt.* 44, 6	In this type yellowness of body parts is the characteristic feature; caused by deranged *pitta*	——	Treatment as described under *Vātaja-pāṇḍuroga*
(iii) *Kaphaja pāṇḍuroga, Utt.* 44, 7	Whiteness of the body parts and other metabolic products of body are the characteristic of this type of disease; caused by deranged *kapha*	——	,,
(iv) *Sannipātaja pāṇḍuroga, Utt.* 44, 8	It is characterised by the symptoms of the other three deranged condition of the bodily humours, as stated above	——	,,
(v) *Kāmala, Utt.* 44, 9, 31 Also known as *kāmalā-pānāki*	The symptoms of *pāṇḍuroga* also allergy to acid foods and drinks, deep-yellow tint of the skin, and physical weakness; caused by the *pitta* humour which gets deranged in case of a patient suffering from any disease and not radically cured	——	General treatment as described for *pāṇḍuroga* Special medicines described in *Utt.* 44, 31
(vi) *Kumbhakāmala, Utt.* 44, 10, 29-30 Also known as *halīmaka*	A case of *kāmala,* complicated by general oedema of the body and intense pain in the joints	——	General treatment as described for *pāṇḍuroga* Special medicines described in *Utt.* 44, 31

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(vi) *Lāgharaka*, *Utt.* 44, 11, 31-32 Also known as *alasaka*	A case of *kumbhakāmala* with the symptoms of general oedema, fever, aching pain in the limbs and joints, drowsiness and lassitude, and gradual emaciation. At this stage this disease is known as *lāgharaka*. This, in its turn, when marked by an excessive preponderance of deranged *vāyu* and *pitta*, is called *alasa*	Advanced case of jaundice	General treatment as described for *pāṇḍuroga* Daily intake of special drugs, cow's urine, iron rust dissolved in acid juices and milk curds, *ghṛta*, and *āmalaka*
Paramada, *Utt.* 47, 12, 25	Sense of heat and heaviness in the body, bad taste in the mouth, excessive mucus secretions, aversion to food, constipation, uraemia, pain in joints, etc.	Chronic alcoholism	Treatment by specially prepared cordials as described in *Utt.* 47, 24-25
Parivartikā, *Ni.* 13, 39; *Ci.* 20, 34	Enlargement and thickening of the prepuce covering the penis. The skin may become hard, corded and pendulous, and may also suppurate. Caused by external trauma or unnatural friction	Paraphimosis	Local massage with clarified butter and fomentation; a course of pacifying drugs Manual withdrawal of the prepuce after lubrication and then covering the penis, normaly followed by fomentation and warm poultices A course of oily enemas and a diet rich in oils and fats recommended
Pārsvavedanā, *Ni.* 1, 16; 4, 2-3	Pain in the sides, due to deranged *vāyu* localized in the stomach		Induce to vomiting; application of compound of *vāyu*-subduing drugs as prescribed in *Ci.* 4, 2-3, later follows

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Pāṣāṇagardabha, *Ni*. 13, 11; *Ci*. 20, 4	Hard and firm swelling without marked pain, developing slowly on the angle of the jaw	Adenoma, or fibroma, or endothelioma in parotid gland	Treatment as described for *andhālajī*
Prameha, *Ni*. 6, 1-16; *Ci*. 11, 2-20 Also known as *meha* Three types : *vātaja*, *pittaja*, and *kaphaja*	All urinary diseases including abnormal urination, vitiated or charged urine, gravel formation, pain, ulceration and secondary symptoms like boils, carbuncles, fever, etc.	Anomalies of urinary secretion	Strict diet avoiding alcohol, water except in minimum amounts, milk, oil, clarified butter, all sweets and sugars, milk-curds, acids, sweet and acid drinks, meat of domestic and aquatic animals Emetics, purgatives, enemas of nutritive substances, massage with medicated oils; internal medicinal prescriptions as described (*Ci*. 11, 5)
(i) *Vātaja meha*, *Ni*. 6, 8, 16 Four types: *sarpimeha*, *vasāmeha*, *kṣaudrameha*, and *hastimeha*	Urinary diseases caused by deranged and aggravated *vāyu*. Heart palpitations, excessive hunger, insomnia, numbness, fits of shivering, colic pains, and acute constipation may also be present	—	Treatments described under specific diseases named, but generally consist of measures for pacifying the deranged *vāyu*
(a) *Sarpimeha*, *Ni* 6, 12; *Ci*. 11, 7	The urine is slightly turbid and unctuous like clarified butter, due to action of deranged *vāyu*	Pyuria	General treatment as described under *prameha* Paste of *kuṣṭha*, *kuṭaja*, *pāṭhā*, *hiṅgu*, and *kaṭurohiṇī* with the decoction of *guḍucī* and *citraka* with honey has specific action

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(b) *Vasāmeha*, *Ni.* 6, 12; *Ci.* 11, 7	The urine is like an emulsion containing fatty substances in appearance; caused by deranged *vāyu*	Lipuria	General treatment as described under *prameha* Decoction of *śiṃśapā* and *agnimantha* with honey has specific action
(c) *Kṣaudrameha*, *Ni.* 6, 12; *Ci.* 11, 7	The urine passed is syrupy in appearance and has a sweet taste; caused by deranged *vāyu*	Glycosuria	General treatment as described under *prameha* Decoction of *khadira*, *kadara* and *kramuka* with honey has specific action
(d) *Hastimeha*, *Ni.* 6, 12; *Ci.* 11, 7	An excessive large quantity of urine is passed in one single continuous stream; caused by deranged *vāyu*	Diabetes insipidus	General treatment as described under *prameha* Alkaline water prepared from the ashes of the bones of the elephant, horse, hog, ass, or camel
(ii) *Pittaja meha*, *Ni.* 6, 7, 14 Six types: *nīlameha*, *haridrāmeha*, *amlameha*, *kṣārameha*, *mañjiṣṭhāmeha* and *śoṇitameha*	Urinary diseases caused by excessive accumulation of deranged *pitta*. Pain in the testes and bladder, acid eructation, fever, dysentery, nausea, lack of appetite, burning sensation, jaundice, and yellow colour of stool may also be present	—	Treatment described under the specific diseases named, but general treatment consists of pacifying the deranged *pitta*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(a) *Nīlameha, Ni.* 6, 11; *Ci.* 11, 6	The urine is frothy, but transparent and bluish in colour; caused by deranged *pitta*	Indicanuria	General treatment as described under *prameha.* Decoction of prescribed drugs as described in *Ci.* 11, 6 has specific action Decoction of *aśvattha* leaves and drugs of the *sālasārādi* group with honey has specific action
(b) *Haridrāmeha, Ni.* 6, 11; *Ci.* 11, 6	Painful micturition of deep yellow coloured urine; caused by deranged *pitta*	Haeglobinuria	General treatment as described under *prameha* Decoction of *rājavṛkṣa* with honey
(c) *Āmlameha, Ni.* 6, 11; *Ci.* 11, 6	The urine passed has a distinctly acid smell and taste; caused by deranged *pitta*	Lithuria	General treatment as described under *pittaja prameha* Decoction of drugs of *nyagrodhādi* group with honey has specific action
(d) *Kṣārameha, Ni.* 6, 11; *Ci.* 11, 6	The urine passed is clear and water-like in appearance but has a distinctly alkaline smell, taste, and feel; caused by deranged *pitta*	Alkaline urine	General treatment as described for *prameha* Decoction of *triphalā* with honey has specific action
(e) *Mañjiṣṭhāmeha, Ni.* 6, 11; *Ci.* 11, 6	The urine shows the colour of alizarin (deep red), due to deranged *pitta*	Choluria	General treatment as described under *prameha*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
			Decoction of madder-roots and red sandal-wood with honey has specific action
(f) *Śoṇitameha*, *Ni.* 6, 11; *Ci.* 11, 6	The urine shows streaks of blood, due to the action of deranged *pitta*	Haematuria	Decoction of *guḍucī*, seeds of *tinduka*, *kāśmarya* and *kharjura*, mixed with honey is prescribed
(iii) *Kaphaja meha*, *Ni.* 6, 6, 13; *Ci.* 11, 6 Ten types: *udakameha*, *ikṣumeha*, *surāmeha*, *sikatāmeha*, *śanairmeha*, *lavaṇameha*, *piṣṭameha*, *sāndrameha*, *śukrameha*, and *phenameha*	Urinary diseases caused by excessive secretion of *kapha* in a deranged state. Catarrh, obesity, indigestion, nausea, cough, excessive sleep, and laboured breathing may also be present	——	General treatment as described under *prameha* Treatments described under specific diseases named; but general treatment consists of pacifying the deranged *kapha* in the body
(a) *Udakameha*, *Ni* 6, 10; *Ci.* 11, 6	The urine has a cloudy appearance, but no other abnormality caused by deranged *kapha*	Polyuria	General treatment as described under *prameha* Decoction of *pārijāta* flowers with honey has specific action
(b) *Ikṣumeha*, *Ni.* 6, 10; *Ci.* 11, 6	The urine contains sugar; caused by deranged *kapha*	Renal glycosuria	Decoction of the *vaijayantī* plant is specific when taken with honey
(c) *Surāmeha*, *Ni.* 6, 10; *Ci.* 11, 6	The urine has the appearance and colour of freshly fermented liquor; caused by deranged *kapha*	Acetonuria	General treatment as described under *prameha* Decoction of margosa nuts with honey has specific action

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(d) *Sikatāmeha*, *Ni.* 6, 10; *Ci.* 11, 6	Painful micturition; the urine shows a precipitate of fine crystals on standing; caused by deranged *kapha*	Passing of gravel	General treatment as described under *prameha* Decoction of the *citraka* plant with honey has specific action
(e) *Śanairmeha*, *Ni.* 6, 10; *Ci.* 11, 6	The urine is slightly slimy to the touch and comes out in intermittent jets due to the derangement of *kapha*	—	General treatment as described under *prameha* Decoction of catechu with honey has specific action
(f) *Lavaṇameha*, *Ni.* 6, 10; *Ci.* 11, 6	The urine passed is appearently normal, but has a saline taste; caused by deranged *kapha*	—	General treatment as described under *prameha* Decoction of *pāṭhā* and *aguru* has specific action when taken with honey
(g) *Piṣṭameha*, *Ni.* 6, 10; *Ci.* 11, 6	The urine resembles water charged with a solution of pasted rice, and there is an unusual sensation of shock during micturition; caused by deranged *kapha*	Chyluria	General treatment as described under *prameha* Decoction of *haridrā* and *dāruharidrā* with honey has specific action
(h) *Sāndrameha*, *Ni.* 6, 10; *Ci.* 11, 6	The urine is viscous and turbid in appearance; caused by deranged *kapha*	—	General treatment as described under *prameha* Decoction of the *saptaparṇa* plant has specific action
(i) *Śukrameha*, *Ni.* 6, 10; *Ci.* 11, 6	The urine is very thick, opalscent and white in colour; caused by deranged *kapha*	Albuminuria	General treatment as described under *prameha* Decoction of *kakubha* and red sandalwood with honey has specific action

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(j) *Phenameha*, *Ni.* 6, 10; *Ci.* 11, 6	The urine is frothy and comes out in broken jets; caused by deranged *kapha*	Pneumaturia	General treatment as described under *prameha* Decoction of *triphalā*, *āragbadha* and *drākṣā* with honey has specific action
Pramehapīḍaka, *Ni.* 6, 17-36; *Ci.* 12 Ten types: *śarāvikā*, *sarṣapikā*, *kacchapikā*, *jālinī*, *vinatā*, *putriṇī*, *masūrikā*, *alajī*, *vidārikā*, and *vidradhikā*	Carbuncles and persistent abscesses which occur as secondary symptoms of *madhumeha* (diabetes). The symptoms are different for different varieties	Diabetic abscesses	Treatment is specific for each type named
(i) *Śarāvikā*, *Ni.* 6, 18; *Ci.* 12	An abscess with a depressed centre as a result of urinary diseases present; caused by the humour responsible for the parent urinary complaint	—	General treatment as described for *madhumeha* Special treatment consists of cleansing of the system by means of purgatives and emetics, surgical operation and other remedial measures as described for *vraṇa*, use of specially prepared *ghṛta*, for external use and drugs for internal use
(ii) *Sarṣapikā*, *Ni.* 6, 19; *Ci.* 12	Pimples or small pustules in various parts of the body, as a result of urinary defects; caused by the humour responsible for the parent urinary complaint or by venereal affections	—	As above
(iii) *Kacchapikā*, *Ni.* 6, 18; *Ci.* 12	An uneven, rough, and serrated abscess caused by urinary diseases; burning sensation is present at the site of the abscess	—	,,

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iv) *Jālinī*, *Ni.* 6, 17, 20; *Ci.* 12	A soft and thin abscess with extreme burning sensation; caused by urinary diseases present in the system	—	General treatment as described under *madhumeha* Immediate treatment as described for *vraṇa*
(v) *Vinatā*, *Ni.* 6, 21; *Ci.* 12	A fairly large carbuncle of bluish colour in the back or in the abdomen, exuding a slimy fluid and attended with severe pain, caused by urinary diseases	—	As above
(vi) *Putriṇī*, *Ni.* 6, 23; *Ci.* 12	An extensive, but not deep-seated abscess studded with slender pipilliary growths; caused by urinary defects present in the system	—	,,
(vii) *Masūrikā*, *Ni.* 6, 24; *Ci.* 12	Small and persistent growth of localized pimples; caused by urinary defects present in the system	—	,,
(viii) *Alajī*, *Ni.* 6, 25; *Ci.* 12	A dreadful abscess of red and white colour, studded over with blisters or exuding vesicles over body	—	,,
(ix) *Vidārikā*, *Ni.* 6, 26; *Ci.* 12	A very big abscess hard and non-suppurating; caused by urinary defects	—	,,
(x) *Vidradhikā*, *Ni.* 6, 27; *Ci.* 12	One or more small carbuncles; caused by urinary defects	—	,,

Name, references, variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Pravāhikā, *Utt.* 40, 82-83, 87-93 Four types : *vātaja, pittaja, kaphaja*, and *raktaja*	A case of *atīsāra* in which the stool is liquid and contains a large amount of mucus attended with pain, burning sensation, and blood-streaked mucus due to the derangement of three humours and of blood ; this condition is caused by wrong diet, specially due to excessive use of dry, fatty, or fried foods	Mucous diarrhoea	General treatment as described for *atīsāra* Intake of boiled milk, and of special digestive mixtures ; application of medicated enemas Special diet as described in *Utt.* 40, 87-93 ; light barley water
Purīṣakṣaya, *Utt.* 40, 80	A case of *atīsāra* in which the stool contains only liquid mucus, and no foecal matter ; all usual symptoms of *atīsāra* are present	—	General treatment as described for *atīsāra* Special diet containing salts, curds, oils, and butter
Rājayakṣmā, *Utt.* 41, 2, 4-6	An aggravated form of *śoṣa* marked by aversion to food, continuous fever, asthma, cough, emission of blood with sputum, and on coughing loss of voice and pain in the sides	Pulmonary phthisis	Treatment as described for *śoṣa*
Raktapitta, *Utt.* 45	Internal bleeding in the intestines, liver or spleen, which comes out from both outlets of the alimentary canal. Rectal bleeding in such cases indicate the incurable type of disease. First symptoms are a strong desire for cold drinks, eructations from the	—	Judicious use of emetics, purgatives, fasting, soothing remedies, flushing of the alimentary canal, enemas Selected medicinal drugs taken internally (*Utt.* 45, 14-25), generally on the lines of those prescribed for *raktātīsāra* (blood dysentery)

Name, references: variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Raktāpitta (*Contd.*)	throat, vomiting, and halitosis, followed by cough, fever, delirious behaviour, sallow complexion, cardiac pain, turbid or black stool with very offensive odour, loss of voice, and absence of sexual desire		Special diet
Raktātīsāra, *Utt*. 40, 67-81	Usual symptoms of *atīsāra*, with discharge of blood with stools, accompanied by fever, griping pain, extreme thirst, and sometimes inflammation of the rectal outlet; caused by the repeated agitation of the *pitta* humour in the abdomen	Blood dysentery	General treatment as described for *pittaja atīsāra* Milk; butter cooked with specified drugs should be taken freely; other medicines are also described in *Utt*. 40, 68-81 Use of nutritive enemas
Retaḥdoṣa, *Śā*. 2, 3; 5, 12 Also known as *śukradoṣa*	Extreme pain during seminal discharge, discoloured seminal fluid (sometimes with streaks of blood) and offensive odour	—	Very difficult to cure; treatment consists of cleansing processes like emesis, purgation, nutritive enemas, diaphoresis; medicinal oils applied externally and a medicinal prescription of several plant-drug extracts for internal use, local cleansing by douches, etc. are also recommended.
Sadyovraṇa, *Ci*. 2, 1-20 Seven types: *chinna, bhinna, viddha, kṣata; piccita, ghṛṣṭa*, and *mathita*	Painful bleeding injuries received in warfare, accidents, attacks of beasts, etc; if left untreated, suppuration and ulceration follow	Fresh injuries	Cooling applications where bleeding is absent or slight; drinking of medicated oily emulsions; cleansing the wound with soothing and antiseptic washes; applications of oint-

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
			ments, plasters, and poultices; fomentation and fumigation. Bandaging and follow-up treatment come later
(i) *Chinna*, *Ci.* 2, 21-28	Gaping wounds on any part of the body, or amputations of ears, hands, legs, etc.	Gaping wounds or amputations	First-aid as described in *sadyovraṇa*; in gaping wounds the sides should be brought together, stitched, and bandage of the patient should be firmly bound so that there is no movement and further aggravation of the stitched wound In case of amputations, the exposed surface is treated with very hot oil (containing extracts of antiseptic drugs) and then bandaged
(ii) *Bhinna*, *Ci.* 2, 8, 29-32	Piercing and perforation of the eyes, viscera and other internal organs. The eyeball may be uninjured, but dangling from the socket. In abdominal injuries lumps or rope-like formations of fatty matter may come out through the perforation	Serious perforation or injury of the internal organs	First-aid as described in *sadyovraṇa* Destroyed eyeballs are incurable but if they are dangling they should be reset manually (using a lotus leaf so as not to damage the eye). A medicated *ghṛta* should be used for such and other ocular injuries Any exuding matter should be dusted over with burnt ashes of astringent woods and black clay-powder. A ligature is applied and the protruding matter is then removed by surgery, followed by bandaging

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Bhinna (*Contd.*)			Healing measures as described in *vraṇa*
(iii) *Viddha*, *Ci.* 2, 14, 18	A wound or an ulcer caused by any sharp pointed *śalya* (shaft) in any part of the body other than the *āśayas* (receptacles of the body) attended with excessive bleeding and excruciating pain	—	For excessive haemorrhage specially prepared potions, poultices, and fomentations are recommended. Other measures as described in *sadyovraṇa*
(iv) *Kṣata*, *Ci.* 2, 18, 56	Abrasions and contused wounds with or without bleeding	Contused wounds	First-aid and follow-up measures as described in *sadyovraṇa*
(v) *Piccita*, *Ci.* 2, 56	Crushed wounds involving fractures of bones	Fractures with superficial injuries	Specific treatment consists of application of oleaginous substances ; use of fomentation and poultices with prescribed drugs The fracture should be treated as described under *bhagna*
(vi) *Ghṛṣṭa*, *Ci.* 2, 57	Mangled wounds with extensive superficial injuries	—	First-aid as described in *sadyovraṇa* Measure for relieving pain to be applied, followed by dusting with powdered medicinal drugs Follow-up measures as described in *vraṇa*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(vii) *Mathita Ci.* 2, 58	Extensive injuries, dislocations, and multiple fractures with mangled injuries due to fall from trees, being run over by carriages or trampled by large beasts	—	Immediate first-aid measures as described in *sadyovraṇa* The body of the patient is kept immersed in a large vat of oil, pending proper treatment Diet should contain meat juice or meat soup Treatment as described in *sadyovraṇa* and *bhagna*; follow-up measures as in the latter cases
Sandhigata netraroga, Utt. 2, 2 Nine types: *pūyalāsa, upanāha, srāva parvaṇī, alajī,* and *krimigranthi*	Diseases localized on the joints and binding tissues of the eyes	—	Described under specific diseases
(i) *Pūyalāsa, Utt.* 2, 3; 12, 29-30	A suppurated swelling associated with any connective tissues of the eye, exuding a thick and foetid pus	—	Venesection and after application of ointments and fomentation Application of special poultices and eye-collyrium General treatment on the lines of *akṣipāka*
(ii) *Upanāha, Utt.* 2, 2-3	The disease is marked by a painless cyst appearing at the union of the pupil and black portion of the eye; attended with itching and burning, and a little suppuration	—	Incision of the affected part, followed by rubbing with powdered *pippalī* and rock-salt mixed with honey Scraping of the affected part is followed next Surrounding part should be gently scratched all round

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iii) *Srāva, Utt.* 2, 3 Four types: *pūyasrāva, śleṣmasrāva, pittasrāva,* and *raktasrāva*	Discharge of fluids from the connective tissues of the eye	—	Treatment as described under each type
(a) *Pūyasrāva, Utt.* 2, 3	Discharge of pus from the connective tissues of the eyes, without any pain, due to the concerted action of the *doṣas*	—	Treatment as described for *akṣipāka*
(b) *Śleṣmasrāva, Utt.* 2, 3	Slimy, thick, white coloured discharges of mucus-like matter from connective tissues of the eyes without pain; caused by deranged *kapha*	—	—
(c) *Pittasrāva, Utt.* 2, 3	The disease is marked by the discharge of warm, water-like and yellowish blue exudation from the eyes; caused by deranged *pitta*	—	—
(d) *Raktasrāva, Utt.* 2, 3	Discharge of thin warm, and blood-streaked fluids from the eye due to contaminated state of the local blood	—	—
(iv) *Parvaṇī, Utt.* 2, 4; 8, 3; 15, 10 Also known as *parvaṇikā*	A small, raised and round copper-coloured swelling, occurring at the junction of the black layer (choroid) and the white layer (sclerotic) of the eye, due to vitiated state of local blood and	Keratitis	Treatment by surgical excision after local fomentation of the junction of the cornea and the tear-ducts About three-quarters of the fleshy growth is hooked and removed as described for *armadoṣa*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
	attended with intense pain and burning sensation		Remaining portion of the cyst is removed, but not completely, in a subsequent operation
			The remnant growth is scraped off by an abrasive preparation
			Application of special collyriums
(v) *Alajī*, *Utt.* 2, 4	A fairly large copper coloured growth occurring in the joining of the black and white portions of the eye; attended with burning sensation and intense pain	A type of keratitis	As above
(vi) *Krimigranthi*, *Utt.* 2, 4-5; 8, 6; 14, 5	A cyst or swelling accompanied by itching sensation at the junction of the sclerotic and inner lining of the eyelids due to parasitic infection	—	Treatment by surgical excision, followed by fomentation
			Application of specially prepared eye-salves
Sannyāsa, *Utt.* 46, 11-14	A form of unconsciousness in which the patient lies in a comatose state and cannot be brought back to consciousness by normal methods recommended for *mūrchā*. Other symptoms of the latter disease like muscular rigidity, fixed stare, slow breathing, etc., may be present	Cataleptic state	Inhalation of fumes, application of eye-salves, massage, shaking the body vigorously, and even pricking into his finger-ends with needles are to be used to rouse the patient
			General treatment as described for *mūrchā* is also to be tried; in fact all measures to bring back consciousness should be taken

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Sanyāsa (*Contd.*)			When conscious, application of emetics, purgatives, special diet and medicines as described in *Utt.* 46, 13-14
Śarkarārbuda, *Ni.* 13, 20; *Ci.* 20, 10	A cyst, affecting the layers of skin, flesh, blood-vessels, ligaments and fat, which bursts with a copious flow of thick syrupy liquid. Growths like crystals of sugar appear on the affected surface and there may be discharge of blood or morbid matter from the burst blood-vessels	Sebaceous horn (?)	Treatment as described for *medaja arbuda*
Sarpaviṣa-kalpa, *Ka.* 4; 5, 21-31 Classified according to type of the snake and according to the type of puncture (deep, superficial, and non-venomous bites)	Symptoms include discolouring of the skin, eyes, nails, and excreta; pain, heavy feeling, yawning, shivering, hoarse voice, rattling sound in throat, lassitude, torpor, difficult breathing, excessive salivation and foaming at the mouth, choking of mouth and nostril, burning sensation, feeling of intoxication, delirium, fever, haemorrhage, swelling and sloughing off of flesh, suppuration, goose-flesh, numbness, vomiting, unnatural gaze, and many other symptoms ending in general paralysis and death	Snake venom poisoning	First-aid as described for *jaṅgama-viṣa-kalpa* Cauterization, blood-letting, application of plasters with antitoxic properties, drinking of a suspension of earth on water from an ant-hill, induced vomiting Administration of cooling and antiseptic drugs, purgatives, and emetics Diet should be restricted to barley water; oil, pulses, wine, etc. are strictly forbidden. Later curds, whey, honey, clarified butter, and meat-soups may be given, but no fish or acid juices

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in br.
			Various tonics with antitoxic properties are described for regular use until recovery (*Ka.* 5, 21-31)
Sarvasaramukharoga, *Ni.* 16, 69-72; *Ci.* 22, 43-45 Four types: *vātaja*, *pittaja*, *kaphaja*, and *raktaja* or *mukhapāka*	Multiple and extensive growth of boils covering the entire mucous membrane of the oral cavity		Affected part rubbed with powdered salts Use of oil-based medicinal gargles, errhines, and smokes Cleansing the system with emetics and purgatives Administration of soothing drugs, antiseptics, medicinal mixtures containing special drugs in cow's urine
(i) *Vātaja sarvasaramukharoga*, *Ni.* 16, 69; *Ci.* 22, 43	The entire cavity of the mouth is studded with vesicles attended with a pricking sensation insides; caused by the derangement of *vāyu*	—	Affected part rubbed with powdered salts Use of oil-based medicinal gargles, errhines, and smoke
(ii) *Pittaja sarvasaramukharoga*, *Ni.* 16, 70; *Ci.* 22, 43	Eruption of large number of small coloured vesicles on the entire membrane, lining the cavity of the mouth; attended with burning sensation; caused by deranged *pitta*	—	Cleansing the system with emetics and purgatives Administration of *pitta*-subduing drugs
(iii) *Kaphaja sarvasaramukharoga*, *Ni.* 16, 71; *Ci.* 22, 43	Eruption of skin-coloured, small, slightly painful, and itching vesicles on the entire inner surface of the mouth	—	Use of medicinal gargles, and smoke Rubbing and purification of the affected part is prescribed

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Kaphaja Sarvasaramukha-roga (Contd.)			Administration of other *kapha*-subduing remedies
(iv) *Mukhapāka, Ni.* 16, 69-72; *Ci.* 22, 43-45	Multiple and extensive growth of boils covering the entire mucous membrane of the oral cavity; caused by vitiated blood	Stomatitis	Affected part rubbed with powdered salts Use of oil-based medicinal gargles, errhines, and smokes Cleansing the system with emetics and purgatives
Sarvasaraśopha, Ci. 23, 2 Five types : *vātaja, pittaja, kaphaja, sannipātaja,* and *viṣaja* (due to toximea)	General oedema of the entire body or oedematous swelling confined to certain parts of the body ; the swelling may be discoloured, soft, painful, and progressive	Anasarca ; oedema	Treatment described for specific diseases named
(i) *Vātaja sarvasaraśopha, Ci.* 23, 4, 14	Deep red, soft, painful swelling which disappear, at intervals due to the aggravation of *vāyu*	—	Regular administration of dosages of castor oil for a month Administration of a tonic preparation
(ii) *Pittaja sarvasaraśopha, Ci.* 23, 5, 14	Yellow to blood-red oedema, attended with burning sensation and expanding rapidly ; caused by the aggravation of *pitta*	—	Treatment consists of tonic and corrective medicine prepared by cooking clarified butter with drugs of the *nyagrodhādi* group
(iii) *Kaphaja sarvasaraśopha, Ci.* 23, 5, 14	White, pale or grey swelling, showing a hard surface, glossy and cold to the touch ; slow in growth and attended with itching pain		As above ..

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iv) *Sannipātaja sarvasara-śopha, Ci.* 23, 7, 14	A general swelling all over the body with various shades attended with pain; rapid growth may take place of the area affected; caused by the simultaneous action of the three deranged bodily humours	—	Treatment by corrective medicine described in the text
(v) *Viṣaja sarvasaraśopha, Ci.* 23, 8	Soft, hanging, loose, and persistent swelling which is not localized but rapidly expands over the skin surface; caused by use of polluted water, prolonged contact with toxic substances, or by slow poisoning	—	Treatment as described for *annapāna-viṣa-kalpa*
Śiroroga, Utt. 25, 2 Eleven types: *vātaja, pittaja, kaphaja, tridoṣaja, kṣayaja, raktaja, krimija, sūryāvarta, anantavāta, ardhāvabhedaka,* and *śaṅkhaka*	Diseases peculiar to the region of head with specific symptoms of each type		Specific treatment as described for the each type
(i) *Vātaja śiroroga, Utt.* 25, 3; 26, 2-5	Violent headache without known cause, which becomes worse at night; caused by deranged *vāyu*	—	General treatment as described for *vātavyādhi* Increased intake of milk, medicinal compound of oils and butter, boiled pulses, and sesamum oil Application of lukewarm plaster of drugs or boiled flesh of fish as described in *Utt.* 26, 3 Use of special medicinal oils, errhines, etc.

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(ii) *Pittaja śiroroga*, *Utt.* 25, 4; 26, 6-7	Violent and burning pain in the head and scalp and hot breath due to the action of deranged *pitta*	—	Cooling plasters containing prescribed drugs and clarified butter and cooling washes for anointing and sprinkling the heads as described in *Utt.* 26, 6 and also as prescribed for *pittaja visarpa* Application of errhiness, purgative drugs, and enemas Diet rich in flesh, butter, and sugar
(iii) *Kaphaja śiroroga*, *Utt.* 25, 5; 26, 8	Headache with a choked sensation in the head and palate, cold and heavy feeling, swollen face and eyes	—	Use of *kapha*-subduing drugs for internal and external use as emetics, errhines, and gargles Potions of clear boiled butter and a special diet of barley, rice, light vegetables, and pulses Use of special snuffs, smoking mixtures, plasters, etc., as described in *Utt.* 26, 8
(iv) *Tridoṣaja śirobhitāpa*, *Utt.* 25, 6; 26, 9 Also known as *tridoṣaja śiroroga*	A violent continuous headache accompanied by all the symptoms of the *vātaja*, *pittaja*, and *kaphaja* types, which finds no relief by simple measure	—	A judicious mixtures of the measures for the *vātaja*, *pittaja*, and *kaphaja* varieties. Draughts of old and matured clarified butter are specially efficacous
(v) *Kṣayaja śiroroga*, *Utt.* 25, 8; 26, 10	Headache with intolerable pain which is aggravated by emesis, blood-letting, errhines, fumigation or fomentation. Persons who have become rapidly emaciated are specially prone to this disease		Nutritive measures for counteracting the wasting disease presents, or known to be efficacious in consumption

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(vi) *Raktaja śiroroga, Utt.* 25, 7; 26, 7	Symptoms of *pittaja śiroroga* brought about by vitiation of the blood inside the head	—	Treatment as described for *pittaja śiroroga* Nasal douche of animal blood
(vii) *Krimija śiroroga, Utt.* 25, 9; 26, 11	A serious type of headache, accompanied by a persistent stinging sensation inside the head and a thin blood-streaked discharge from the nose; caused by the growth of local parasites	—	Use of drugs for catharsis, errhines, fumigation of special types (*Utt.* 26, 11) Special diet
(viii) *Sūryāvarta, Utt.* 25, 10; 26, 12	Severe headache localized in the eyes and the eyebrows, beginning at sunrise, progressing with the solar heat and abating at sunset	—	General treatment as described for *śiroroga* Application of errhines, gargles, and plaster Diet rich in rice, milk, butter, and meat juice Fat-based plasters containing acid juices
(ix) *Anantavāta, Utt.* 25, 11; 26, 15	Headache accompanied by violent pain in the muscles and nerves of the neck. The pain may extend to the eyebrows and temples; there is a throbbing sensations in the jaw-muscles and sometimes a partial paralysis of the jaw	—	General treatment as for the *sūryāvarta* type; blood-letting; a diet of *vāyu* and *pitta*-subduing properties, wheat, sugar, milk, butter, etc.

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(x) *Ardhāvabhedaka*, *Utt.* 25, 12; 26, 13	Excruciating pain in one side only of the skull which suddenly disappears and reappears after irregular intervals of a week or more	—	Treatment as described for the *sūryāvarta* type
(xi) *Śaṅkhaka*, *Utt.* 25, 13; 26, 16-18	Violent headache with excruciating pain in the temples	—	Very difficult to cure ; treatment by external application and special diet
			Application of special errhines, plasters, cooling washes, and mustard oil
Śirotpāta, *Utt.* 6, 19; 8, 6; 12, 12 One type: *śirāpraharṣa*	Slight pain and discolouration of the eye; the local veins become dark and prominent	—	General treatment as described for *raktaja adhimantha*
			Special collyriums and ointments as described (*Utt.* 12, 11)
(i) *Śirāpraharṣa*, *Utt.* 6, 20; 8, 6; 12, 12	Complete blindness consequent to neglect of discolouration and pain in the eye (*śirotpāta*); the eye discharges dark and clear liquid in large quantities	—	Local venesection
			Special collyriums and ointments as described (*Utt.* 12, 12)
Ślīpada, *Ni.* 12, 14-18; *Śā.* 8, 28; *Ci.* 19, 27 Three types : *vātaja*, *pittaja*, and *kaphaja*	Swelling of the legs, from thigh to feet due to local accumulation of deranged humours, especially *kapha*. The disease is endemic to humid and damp areas with stagnant waters	Elephantiasis	Treatment as described under each type

areas with stagnant waters

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(i) *Vātaja ślīpada*, *Ni.* 12, 16; *Ci.* 19, 23	The swollen parts assume black colour; feelings of roughness and a sort of spasmodic pain, unevenness touch, are the other signs of the affected parts; caused by the derangement of *vāyu*	—	Venesection of the veins belonging to feet, four or five *aṅgulas* above the instep; this is followed by olifaction and fomentation of the affected part Cauterization of the affected part is also recommended Application of enemas, and potion of castor oil and milk after the patient recovering from the illness
(ii) *Pittaja ślīpada*, *Ni.* 12, 16; *Ci.* 19, 24	The *pitta* aggravated type is marked by a little softness and yellowish hue of the diseased localities; attended with fever and burning sensation	—	Venesection of the vein below the instep Medicinal remedies as described for *pittaja arbuda* and *pittaja visarpa*
(iii) *Kaphaja ślīpada*, *Ni.* 12, 16; *Ci.* 19, 25	The *kapha* originated type is marked by the whiteness and glossiness of the affected locality; the diseased part is also glossy, slightly painful, heavy and attended with nodules	—	Venesection of the major vein of the first toe Plastering of the operated part with plaster made of prescribed substances as found in *Ci.* 19, 25 Intake of decoction of *kapha*-subduing drugs at intervals; alternatively paste of prescribed drugs is recommended; potions, and alkaline solutions as described in *Ci.* 19, 25-27

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Śoṇitārśas, Utt. 3, 20; 8, 4 •	Persistent growth of soft and fleshy nodules on the cyelids, reappearing even after surgical removal; caused from the vitiated condition of blood	—	Difficult to cure. Treatment by surgical incision is prescribed
Śopha, Sū. 17 Six types : *vātaja, pittaja, kaphaja, śoṇitaja, sannipātaja,* and *āgantu*	A swelling, round, elevated, even or uneven, in its surface, appear at any part of the body and restricts to the skin and flesh or concerted action of the deranged bodily humours. It passes three stages, unsuppurated, suppurating, and suppurated. The unsuppurated or immature stage is marked by little pain and heat inside the swelling, and coldness, hardness, and a slight elevation of the surface. In the suppurating stage sensation of pricking pain in the affected locality, change of the complexion of the local skin, increase of the swelling, fever, thirst, burning sensation, etc. are noticed. In the last stage the pain subsides, and the fully matured swelling shows the signs of cracking and assumes the reddish or blackish hue in case of aggravation of *vāyu*, yellowish hue in the deranged *pitta*, and whitish appearance in the *kapha* aggravated origin	Inflammatory swelling	Treatment mainly confined to surgical excision. The other ancillary acts are mutilation of the swelling by massage, bleeding, poulticing, opening of the boil, purification of the internal morbid matter with corrective medicines, healing and restoring of the natural colour of the skin to the cicatrix

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Śoṣa, Utt. 41 Also known as *kṣayaroga;* an aggravated form of the disease is known as *rājayakṣmā*	A gradual desiccation and wasting of the *dhātus* (fundamental constituents of the body). The first symptoms are lassitude, fever, asthma, cough, loss of voice, etc., and are caused by over straining, irregular diet, sexual excesses, grief, ulcers forming inside the lungs. The patient becomes rapidly weak, emaciated, stooping, and sallow complexioned, inspite of improved conditions of living and diet	Consumption	The treatment should not vary with variations of symptoms in individual cases and special stages of the disease, and should be strictly adhered to. The disease is difficult to cure but can be relieved by persistent treatment, proper rest, proper diet and freedom from mental strain. Details of the treatment are given in *Utt.* 41, 21-35
Stanaroga, Ni. 10, 17, 25; *Ci.* 17, 26 (six types as that of *nāḍīvraṇa*)	Abscess or sinus formation inside the mammary glands and vitiation of breast milk, pain, fever, etc.; caused by the derangement of humours or by external injuries	Inflammation of mammary	Medicinal potions of clarified butter, followed by emesis and then a diet of boiled rice and *mudga* pulse. After five or six days of this treatment, the patient is given special medicines aimed at increasing and purifying the flow of milk (*Ci.* 17, 26)
Stanavidradhi, Ni. 10, 25; *Ci.* 17, 27-29 Three types : *āma* (non-suppurated), *pacyamāna* (suppurating), and *pakva* (suppurated)	Inflammatory swellings and abscesses affecting the mammary glands; connected with *stanaroga*	Mammary abscess	Any residual milk inside the breasts is pressed out No poultices are to be applied as suppuration of this delicate gland is to be avoided as far as possible. Internal medicines are to be applied for subduing the deranged humours responsible for the condition

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Stanavidradhi (*Contd.*)			If suppuration has actually occurred, the pus should be drained off by a small incision avoiding the nipple and its surrounding areole
			Healing measures as described in *vidradhi*
Stanyanāśa, *Śā*. 10, 24	Suppression of lactation due to pschychological reasons like anger, grief, and distaste for feeding the child	Suppression of lactation	The pschyological factors must be removed first; treatment by proper dieting with a predominance of good quality cereals, meat soup, light wines, garlic and sesamum, fish, bottle-gourds, jute leaves; various drugs are also prescribed
Śūkaroga, *Śā*. 8, 37 ; *Ni*. 14. 1-22 ; *Ci*. 21. Eighteen types : *sarṣapikā*, *aṣṭhīlikā*, *grathita*, *kumbhīkā*, *alajī*, *mṛdita*, *sammuḍapiḍakā*, *avamantha*, *puṣkarikā* ; *sparśahāni*, *uttamā*, *śatopanaka*, *tvakpāka* *śonitārbuda*, *māṃsārbuda*, *māṃsapāka*, *vidradhi*, and *tilakālaka*	Pimples, boils, tumours and ulcers formed on the male organ, due to unclean and unnatural excitation of the sexual parts, or the use of exciting applications	Diseases of the male organ	Local venesection Local application of powders, pastes, etc. ; application of purgatives, and light diet are similarly administered Specific treatment as described of the disease named
(i) *Sarṣapikā*, *Ni*. 14, 3; *Ci*. 21, 2	Tiny herpetic eruptions resembling the seeds of white mustard on the penis on account of deranged		Scarification and dusting of powder of drugs of astringent tastes, and paste

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
	condition of blood and *kapha* as a result of injudicious application of *śūka* (a kind of irritating water insect)		of the same drugs and oil in the affected part
(ii) *Aṣṭhīlikā*, *Ni.* 14, 4; *Ci.* 21,3	Eruptions of hard pimples on the penis due to the aggravation of local *vāyu* by the poisonous *śūka* insect	—	Blood-letting by leeches Treatment in line of *kaphaja vidradhi*
(iii) *Grathita*, *Ni.* 14, 5; *Ci.* 21, 4	Knotty nodules on the penis owing to its frequently stuffed with the bristles of *śūka* and thereby aggravation of local *kapha*	—	Fomentation, and poulticing of the affected part as described in *Ci.* 21, 4.
(iv) *Kumbhīkā*, *Ni.* 14 6; *Ci.* 21, 5	Suppuration and ulceration of the genitals developing after formation of a number of small cysts with local inflammation around the male organ	—	The suppuration is lanced by a scalpel, drained, and antiseptic applied, followed by healing ointments
(v) *Alajī*, *Ni.* 14, 7; *Ci.* 21, 6	Symptoms same as that of *alajī* under *prameha*	—	Blood-letting by leeches: healing measures consist of application of decoction and oil of the same astringent drugs
(vi) *Mṛdita*, *Ni.* 14, 8; *Ci.* 21, 7	Growth of a wart on the hard and inflammed penis attended with swelling of the affected part; caused by the aggravation of local *vāyu*	—	Affected part is affused with tepid oil of *balā* and poulticed with a lukewarm plaster of p[illegible]scrib[illegible] drugs

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(vii) *Sammuḍapiḍakā*, *Ni.* 14, 9; *Ci.* 21, 8	Eruptions of pustules on the penis due to extreme pressure on that particular part	—	Blood-letting by the application of leeches on the condylomatous growths Incision is followed in cases of suppuration. Plastering is then made with honey and clarified butter
(viii) *Avamantha*, *Ni.* 14, 10; *Ci.* 21, 9	A large number of elongated pustules on the penis burst at the middle, causing pain and shivering	Epitheilema	Incision of the pustules when suppurated followed by the application of specially prepared oil as a healing measure
(ix) *Puṣkarikā*, *Ni.* 14, 11; *Ci.* 21, 10	Eruptions of small pimples around the principal one on the penis in the shape of lotus flower ; caused by simultaneous derangement of blood and *pitta*	—	Applications of cooling measures. Blood-letting by leeches and subsequent affusion of the affected part with clarified butter
(x) *Sparśahāni*, *Ni.* 14, 12; *Ci.* 21, 11	A complete anaesthesia of the region of penis due to the vitiated blood by the injudicous application of *śūka* in that part	—	Blood-letting followed by plastering with prescribed drugs Affected part is affused with cold compound of milk, butter, and expressed juice of sugarcane
(xi) *Uttamā*, *Ni.* 14, 13; 21, 12	Appearance of pustules on the penis through the vitiation of local blood and *pitta* by the constant application of *śūka* in that part	—	Removal of the pustules by means of surgical operation with *vaḍiśa* instrument Local application of powders of astringent drugs with honey

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(xii) *Śataponaka*, *Ni*. 14, 14; *Ci*. 21, 13	The disease is marked by small openings on the penis; caused by aggravated blood and *vāyu*	—	Scarification of the diseased part followed by the local application of condensed extract and oil of prescribed drugs
(xiii) *Tvakpāka*, *Ni*. 14, 15; *Ci*. 21, 14	Suppuration of the penis attended with fever and burning sensation in the affected part	—	Treatment as described under *visarpa*
(xiv) *Śoṇitārbuda*, *Ni*. 14, 16; *Ci*. 21, 14	The penis is marked by the eruption of black vesicles and covered over with a large number of red pimples with an excruciating pain in the ulcerated region of the organ	—	Treatment as described under *raktaja vidradhi*
(xv) *Māṃsārbuda*, *Ni*. 14, 17; *Ci*. 21, 16	Vegetation of fleshy tumour on the penis	—	Difficult to cure; treatment as described for *śūkaroga* to give temporary relief
(xvi) *Māṃsapāka*, *Ni*. 14, 18; *Ci*. 21, 16	Suppuration as well as sloughing of the penis attended with different kinds of pain due to the derangement of three humours	—	Difficult to cure but treatment in line of *śūkaroga* may be applied for temporary relief
(xvii) *Vidradhi*, *Ni*. 14, 19; *Ci*. 21, 16	Abscess of varied colour on the penis; attended varied sort of pain, and suppuration	—	Treatment as described under *sannipātaja vidradhi*
(xviii) *Tilakālaka*, *Ni*. 14, 21; 21, 16	Blackening of the penis due to the simultaneous aggravation of the three humours	—	Treatment as described under *śūkaroga*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Śuklagataroga, *Utt.* 4 Eleven types : *prastaryārma*, *śuklārma*, *kṣatajārma* or *lohitārma*, *adhimāṃsārma*, *snāyvārma*, *śuktikā*, *arjuna*, *piṣṭaka*, *śirājāla*, *śirāpiḍaka*, and *balāsagrathita*	Affections of the white sclerotic coat with various symptoms as described for each type	—	Treatment as described for each type
(i) *Prastaryārma*, *Utt.* 4, 3; 8, 3; 15	Slight but extensive violet tinted swelling of the white portion of the sclerotic	—	Treatment as described for *armadoṣa*
(ii) *Śuklārma*, *Utt.* 4, 4; 8, 4; 15	A crop of soft, pale-coloured growths gradually spreading over the entire visible portion of the sclerotic coat	Filmy or fleshy growths in the sclerotic	General treatment as described for *armadoṣa* Specific treatment lies in the removal of the root of polypus after being put it asunder from the affected part to the extremity of the pupil
(iii) *Lohitārma*, *Utt.* 4, 5; 8, 4; 15	Pink and fleshy growth on the white portion of the sclerotic coat	—	Treatment as described for *armadoṣa*
(iv) *Adhimāmsārma*, *Utt.* 4, 6-7; 8, 4; 15, 3	Dark-brown or liver-coloured soft growth of large size on the white sclerotic coat	—	
(v) *Snāyvarma*, *Utt.* 4, 6-7; 8; 15, 2-8	Rough yellowish growth on the white coat of the sclerotic, slowly developing in size	—	

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(vi) *Śuktikā*, *Utt*. 4, 8; 10, 7-8; 15	Brown or amber specks on the white of the sclerotic	—	Special remedy with eye-salve prepared with antimony, conch, curd, and rock-salt
			No surgical treatment. Palliative measures adopted to give some relief
(vii) *Arjuna*, *Utt*. 4, 9; 12, 13-15	A single raised dot of bright red colour, developing on the surface of the white of the eye	—	General treatment as described for *pittaja adhimantha*. Use of specially prepared collyriums, eye-drops, scarifying powders (which are capable of removing the affected surface layer)
(viii) *Piṣṭaka*, *Utt*. 4, 9; 8, 7; 11, 7-8	A raised yellow, translucent circular growth of small size on the sclerotic coat	—	Treatment as described for *kaphaja adhimantha*
			Use of specially prepared eye-salve (*Utt*. 11, 7-8)
(ix) *Sirājāla*, *Utt*. 4, 10; 8, 3; 15, 9	Extensive patches of a network of hardened veins, coloured red, gradually spreading over the white of the eye	—	Treatment on the general lines described for *armadoṣa*
			Hardened veins are hooked and pulled out by a hook instrument and removed by a sharp cutting instrument
			Any extra cysts or pimples should be separately excised
(x) *Sirāpiḍaka*, *Utt*. 4, 10; 8, 3; 15, 9	An unsuppurated cyst or growth over the white of the eye	—	Treatment as described for *sirājāla*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(xi) *Balāsagrathita*, *Utt.* 4, 13; 11, 6	A hard, transparent cyst, coloured like bell-metal and covered with fine veins on the sclerotic coat	—	Not subjected to surgical operation; application of eye-salve as described in *Utt.* 11, 6
Śukranetra, *Utt.* 19, 14	Excessive lachrymation and white discharges from the eyes of infants	—	Treatment as described for *kaphaja adhimantha* A specially prepared collyrium described in *Utt.* 19, 14 has specific action
Suṣkākṣipāka, *Utt.* 6, 16; 9, 4	Unusual stiffness and hardness of the eyelids, difficulty of opening them; cloudy and hazy vision	Non-secreting type of conjunctivities	Treatment and special diet as described for *anyatovāta* A special collyrium for application to the eyes, prepared as described in *Utt.* 9, 4
Svarabheda, *Utt.* 53 Six types: *vātaja*, *pittaja*, *kaphaja*, *medaja*, *tridoṣaja*, and *kṣayaja*	Hoarse voice, discolouration of the face, eyes, stool and urine. constricted feeling in throat, and indistinct speech. The symptoms become more pronounced at night	Hoarseness of voice	The disease in some of its forms are very difficult to cure and others are incurable and their treatment is at best palliative
Śvāsa, *Utt.* 51 Five types: *kṣudraka*, *tamaka*, *chinna*, *mahā*, and *ūrdhva*	Derangement of *vāyu* resulting in gasping, wheezing sound, and laboured breathing. The first symptoms are pain in the heart and lungs, aversion to activities and food, uraemia, constipation, bad taste in the mouth. When fully developed every movement causes gasping, relief in sitting	Asthma	Treatment depends upon the vitality of the patient and the seriousness of the disease. Simple measures are sufficient for fairly healthy patients with *kṣudraśvāsa* and *tamaka*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
	up in the first type; thirst, perspiration, vomiting, rattling sound in throat, increased breathing difficulty in bad weather, cough, fever, and fitful sleep are the symptoms of the *tamaka* variety; intermittent and uneven breath, are the signs of the *chinna* type; fixed gaze, unconsciousness, cramps at sides, parched lips and throat are the symptoms of the *mahā* type; quick breathing, unconsciousness with choked voice and upturned eyes, and the vital parts stretching out with each stroke of breath are the specific symptoms of *ūrdhva* type		Emetics, purgatives, oily fomentations, smoking of medicinal herbs in pipes Massage with medicated oils, cleansing the internal organs with emetics, purgatives and enemas, use of gargles, smoking mixtures, and errhines General treatment, medicines, and lambatives as described for *kāśa* and *śvāsa* Specific medicines for the various forms of the disease as described in *Utt.* 53, 11-15 Old and matured clarified butter, cooked with various drugs named, are beneficial if taken regularly (*Utt.* 51, 13-22) Meat juice, flesh of birds, chicken soup, acid fruit juices, clarified butter, high intake of salt, cereals, etc., are recommended as diet Linctus and lambatives of various types during acute stages to get relief
Śvitra, *Ci.* 9, 11, 13-17	Gradual loss of pigment from patches of the skin without any other distressing symptoms	Leucoderma	General treatment as described under *kṣudrakuṣṭha*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Śvitra (*Contd.*)			Regular use of an internal medicine (containing roots of *bhadrā* and *malapu*) which produces blisters on the affected part. These blisters are treated with various preparations containing ashes of burnt skins of leopards, elephants, cobra and *pūti* insects, and also mustard oil, alkalis, elephant's urine, and other drugs (*Ci.* 9, 13-17). The blisters on healing restore normal skin
Tāluroga, *Ni.* 16, 38; *Ci.* 22, 32-36 Nine types: *galaśuṇḍikā, tuṇḍikerī, adhruṣa, māṃsakacchapa, tālvārbuda, māṃsasaṃghāta, tālupuppuṭa, tāluśoṣa*, and *tālupāka*	Various symptoms developed at the root or roof of the palate, or of the soft palate	—	Treatment described under specific diseases named
(i) *Galaśuṇḍikā*, *Ni.* 16, 38; *Ci.* 4; 22, 33, 34	Inflammatory swelling at the root of the palate, which gradually increases in size and depth	Elongated uvula	The morbid growth should firmly be gripped with forceps and surgically removed with a sharp instrument, taking care to leave about a quarter of the growth undisturbed, in order to prevent excessive haemorrhage and other serious complications
(ii) *Tuṇḍikerī*, *Ni.* 16, 40; *Ci.* 22, 34	A thick deep-seated suppurated swelling with burning and pricking sensation at the root of the palate	Enlarged tonsils	Treatment as described for *galaśuṇḍikā*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iii) *Adhruṣa*, *Ni*. 16, 41; *Ci*. 22, 34	A red swelling at the root of palate, accompanied by sensation of cold, severe pain, and fever	Inflammation of the throat	As above
(iv) *Māṃsakacchapa*, *Ni*. 16, 38, 42; *Ci*. 22, 34	A slowly developing, prominent and serrated swelling in the region of the soft palate	—	,,
(v) *Tālvārbuda*, *Ni*. 16, 43; *Ci*. 22, 35, 48	Tumour-like swelling in the shape of a lotus petal in the region of the soft palate	—	The disease is considered incurable
(vi) *Māṃsasaṃghāta*, *Ni*. 16, 44; *Ci*. 22, 34	A painless growth of morbid fleshy tissues at the edge or periphery of the soft palate	Adenoma of the palate	Treatment as described for *galaśuṇḍikā*
(vii) *Tālupuppuṭa*, *Ni*. 16, 44; *Ci*. 22, 34	A permanent painless swelling of small size at the region of the soft palate	Epulis of the palate	As above
(viii) *Tāluśoṣa*, *Ni*. 16, 45; *Ci*. 22, 36	A parched sensation with dyspnoea and a severe pain in the soft palate due to the concerted actions of deranged *vāyu* and *pitta*	—	Treatment consists of application of oil fomentation, and *vāyu*-subduing measures
(ix) *Tālupāka*, *Ni*. 16, 47; *Ci*. 22, 35	Gradual suppuration of the soft palate	Ulceration of the palate	Treatment in the line of deranged ***pitta***
Tilakālaka, *Ni*. 13, 35; *Ci*. 20, 20	Black, painless spots of small diameter, on the skin and not raised above the surrounding area	Freckles	Treatment as described for *jatumaṇi*

Names, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Timira, Utt. 7, 2-6; 17, 19-33 Five types: *vātaja, pittaja, kaphaja, raktaja,* and *sannipātaja*	Partial blindness, with symptoms varying with the affliction of the four successive *paṭalas* (layers) of the pupil by the infiltration and accumulation of the bodily *doṣas*	Partial to complete loss of vision	Any surgical cure or blood-letting is considered unsuitable for this disease Treatment by medicinal application, internal medicines, and special diet described in *Utt.* 17, 19-33
(i) *Vātaja timira, Utt.* 7, 7	Vision becomes clouded, shifty, crooked, and tinted red; caused by deranged *vāyu*	—	General measures as described for *timira*, and administration of soothing drugs having *vāyu*-subduing action
(ii) *Pittaja timira, Utt.* 7, 8; 17, 19-23	Partial loss of vision; lighted objects seem to have rainbow coloured hazes around them and also apparent visions of blue-black flashes; caused by deranged *pitta*	Glaucoma (?)	Local venesection followed by cleansing with specially prepared *ghṛta*, use of lambatives, errhines, and oil prepared with prescribed drugs, honey, etc.
(iii *Kaphaja timira, Utt.* 7, 9; 17, 28	Parital loss of vision; every thing appears covered with a dense white cloud, or oily white and dull or submerged under a sheet of milky fluid; caused by deranged *kapha*	—	Treatment as described for *kaphaja timira*
(iv) *Raktaja timira, Utt.* 7, 10; 17, 19-28	Partial loss of vision; all objects appear gloomy and blood-red, sometimes greyish or blackish, due to vitiated blood	—	Treatment as described for *timira*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(v) *Sannipātaja timira*, *Utt.* 7, 11; 17, 29	All visible objects appear confused and having many colours and shapes; the normal shapes become changed in the vision and there may be double or multiple vision; caused by the simultaneous action of the three deranged bodily humours	—	As above
Tṛṣṇā, *Utt.* 48 Seven types: *vātaja*, *kaphaja*, *pittaja*, *kṣataja*, *kṣayaja*, *āmaja*, and *annaja*	Parched and burning sensation in the palate and mouth, feeling of great heat, vertigo, partial loss of consciousness, and delirium	Morbid thirst	Inducing vomiting by drugs to evacuate the water inside the stomach Use of cooling gurgles, and plasters Drinking of tepid water followed by cold water sweetened by honey or sugar, after the patient has become partially normal Special medicines as described in *Utt.* 48, 17-35
Udara, *Ni.* 7, 1-16; *Ci.* 14 Nine types: *vātaja*, *pittaja*, *kaphaja*, *dūṣyodara*, *plīhodara*, *yakṛtddalyudara*, *vaddhagudodara*, *āgantuka* or *parisrāvī*, and *udakodara*	Acute distension of the abdomen, abdominal tumours, weakness, incapacity of locomotion, oedema, impaired digestion, burning sensation, and constipation	Abdominal enlargements	The disease is practically hard to cure except in early stages Diet is restricted to soft-boiled cereals and lotus-seeds. All heavy food, fats, meat, etc., are forbidden Castor oil with milk or cow's urine, or milk of a camel as a drink Special medicines for internal use for immediate relief and permanent cure are described (*Ci.* 14, 2)

Names, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(i) *Vātaja udara, Ni.* 7, 7; *Ci.* 14, 4	The abdominal wall protrudes sidewise and downwards, showing corresponding enlargement from the outside. The local skin is crossed with black veins. There is also pain, acute constipation, uraemia and flatulent rumbling sound inside the stomach; caused by deranged *vāyu*	—	General treatment as described for *udara* A special course of purgatives, enemas, diet, and medication as described (*Ci.* 14, 4)
(ii) *Pittaja udara, Ni.* 7, 8; *Ci.* 14, 5	Swelling of the abdomen with yellowish skin, yellowish eyes, and yellow veins over the abdomen. The swelling increases rapidly and the yellow colour extends to the nails, general com plexion, stool, and urine; caused by deranged *pitta*. There is also fever, burning sensation and intense pain in the abdomen	—	General treatment as described for *udara* A special course of purgatives, enemas, and poulties; diet and special medicine as described in *Ci.* 14, 5
(iii) *Kaphaja udara, Ni.* 7, 9; *Ci.* 14, 6	Abdominal dropsy, overspread with pale veins and cold to the touch. The swelling gradually increases along with general lassitude, paleness of complexion, and general weakness	Abdominal dropsy	General treatment as described for *udara* Poultices and medicines specified for this type of dropsy are described in *Ci.* 14, 6 Frequent fomentation
(iv) *Dūṣyodara, Ni.* 7, 3, 10; Ci. 14, 7	Swelling of the abdomen with specific symptoms of the three *doṣas* as well as of the *dūṣiviṣa*	—	Difficult to cure

Names, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
	(slow poisoning); paleness and yellowness of the body, thirst, dryness of the mouth, unconsciousness at short intervals are the supervening symptoms; caused by the vitiated of the three humours due to intake of poisonous food	—	Use of specially prepared purgatives, and paste Administration of piece of sugarcane or fruits of creepers after making it poisonous from the poison of cobra, or poisonous roots or bulbs for internal use
(v) ***Plīhodara***, *Ni.* 7, 11; *Ci.* 14, 17	Abdominal swelling due to enlarged spleen with protrusion of the left side of the abdomen. There is also low fever, lassitude, lack of digestive power, weakness, and yellowness of the skin, eyes, etc.	Chronic enlargement of spleen	Treatment consists of anointing of the abdomen with specially prepared paste; use of purgatives enemas, and poultice prepared with prescribed substances
(vi) ***Yakṛtddalyudara***, *Śā.* 8, 34; *Ni.* 7, 12; *Ci.* 14, 18	Abdominal dropsy due to tender and enlarged liver with protrusion of the right side of the abdomen. There is also low fever, lassitude, weakness, indigestion, and jaundice	Enlargement of spleen with enlarged liver	Local venesection if the condition is acute General treatment as described for *udara* Use of prescription of special drugs described (*Ci.* 14, 18) Surgical treatment if the liver is unduly swollen
(vii) ***Vadhagudodara***, *Ni.* 7, 13; *Ci.* 14, 20	Abdominal distension caused by peritonitis or enteritis, the fecal matter remaining inside the intestines. There may be vomiting with a distinct smell of stools, and scanty stools passed with great difficulty	Peritonitis or enteritis	General treatment as described under *udara* Fomentation and oily application Surgical incision on the left side 3″ below the umbilicus. The

Names, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Vaddhagudodara (Contd.)			intestines are drawn out and any stone, dry hardened morbid matter, hair, etc. carefully removed. The excisions are stitched up after lubrication with honey and replacing the intestines in position
			If the disease is at an acute condition, the surgical operation on the intestines is to be performed immediately
(viii) *Parisrāvī, Ni.* 7, 14; *Ci.* 14, 21 Also known as *āgantuka*	Perforation of the intestine by thorny or sharp materials like glass, fish-bones, etc.; oozing of fluids from rectum. There is severe pain and burning sensation	Peritonitis due to perforation of the bowel	Immediate surgical excision on the left side of the abdomen about 3″ below the navel. The intestine is drawn out through the slit, examined for any hardened matter, stone, hair, etc., which cause the perforation. The obstruction is carefully removed and the perforation thoroughly cleaned. If the intestine is severed, the two ends are firmly pressed together, and large black ants applied all around to grip the ends together. The bodies of the ants are then clipped off, the intestines lubricated with honey and clarified butter and reintroduced in position. Stitching and other post-operative methods followed as usual
			Diet restricted to milk

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(ix) *Udakodora, Ni.* 7, 15; *Ci.* 14, 22 Also known as *jalodara*	Acute accumulation of fluid inside the abdomen with thirst fever, burning pain, aching of the limbs, dysentery, hiccup, and burning sensation of the feet and hands	Acute abdominal dropsy or ascites	Local application of medicinal oils described; fomentation with hot water Surgical puncturing below the umbilicus to the left side; and tapping of the accumulated fluid by means of a bird's quill or metal tube open at both ends. Only a fraction of the morbid fluid is drained in one operation due to fresh accumulation with distressing symptoms The puncture is dressed and bandaged The bandage should be taken out at intervals of two to sixteen days (according to severity) and tapping continued until cure
Udāvarta, Utt. 38, 5, 9-14; 55, 1-39 Thirteen types caused by repression or forcible stoppage of the natural processes and urges of the body, i.e., *vāta* (flatus), *purīṣa* (bowel movement), *mūtra* (urination), *aśru* (lachrymation), *jṛmbha* (yawning), *kṣava* (sneezing), *udara* (eructation), *chardi*	Each type of repression gives rise to various symptoms described in *Utt.* 55, 5-17. One or more of the humours aggravated and disturbed in each case	—	General treatment for correcting and pacifying the humour or humours, actually deranged

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Udāvarta (*Contd.*) (vomiting), *śukra* (discharge of semen), *kṣut* (hunger), *tṛṣṇā* (thirst), *śvāsa* (breathing), and *nidrā* (sleep)			Specific treatment for each type of the disease is described in *Utt.* 55, 20-39
Unmāda, *Utt.* 62 Six types: *vātaja*, *pittaja*, *kaphaja*, *tridoṣaja*, *śokaja*, and *viṣaja*	Unbalanced and abnormal state of mind, caused by humoral aggravation on extreme mental disturbances or by effect of poisons. The actual symptoms vary with different types, but the preliminary signs are: fits of unconsciousness, ringing sound in ears, unnatural agitation of mind, unbalanced energy in certain action, palpitation of the heart, etc.	Insanity	Massage, fomentation, emetics, purgatives, errhines containing drugs and mustard oil, fumigation with burning beef or dog's flesh Patient's mind should be taken away from its introvert state by new sights, shocking news, frightening situations, threats of physical torture and actual injury Segregation and a minimum diet given every third day Blood-letting Special medicines as described in *Utt.* 62, 12-14
Upadaṃśa, *Ni.* 12, 7-13; *Śā.* 8, 37; *Ci.* 19 Five types: *vātaja*, *pittaja*, *kaphaja*, *raktaja*, and *sannipātaja*	Inflammatory swelling or ulceration of the male organ due to unclean sexual habits, co-habitation with diseased or unclean women, etc.	Venereal disease (Syphilis? Soft chancre?)	Local venesection Application of oily massage, oils and oil-based internal medicines, fomentation, etc. Venesection of the male organ or bleeding by application of leeches, to drain off contaminated blood

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
			Internal cleansing by emetics and purgatives, enemas, etc.
			Specified treatment for the various types of the disease named
(i) *Vātaja upadaṃśa*, *Ni*. 12, 9; *Ci*. 19, 15	Inflammation, roughness, and pain in the genital organ ; bursting or cracking of the prepuse and local membranes due to the derangement of local *vāyu*	—	General treatment as described for *upadaṃśa*
			Local application and regular dosage of pacifying drugs described in *Ci*. 19, 15
(ii) *Pittaja upadaṃśa*, *Ni*. 12, 10; *Ci*. 19, 16	Swelling and discolouration of the male organ with extreme burning sensation ; pain and rapid suppuration ; caused by deranged *pitta*	—	General treatment as described for *upadaṃśa*
(iii) *Kaphaja upadaṃśa*, *Ni*. 12, 11; *Ci*. 19. 17	Swelling, hardness, and glossy appearance of the male organ with itching and pain. Slow suppuration may be present; caused by deranged *kapha*	—	General treatment as described under *upadaṃśa*
			Medicated plaster or ointment composed of specified drugs (*Ci*. 19, 17)
			Compresses, bleeding, emesis, purgation and application of pacifying drugs to stop suppuration or to prevent the same
			If suppuration has set in, a small incision should be made, the

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iii) *Kaphaja upadaṃśa* (*Contd.*)			morbid matter completely drained out, cleaned, treated with disinfectants and medicinal pastes as described in *Ci.* 19, 18 Washing the affected part with a composition of milk, butter, sugar, and drugs; application of a plaster described in *Ci.* 19, 16
(iv) ***Raktaja upadaṃśa***, ***Ni.*** **12, 12;** ***Ci.*** **19, 21**	Swelling and eruption of large black vesicles on the male organ with frequent and heavy blood discharges from the urethra. Pain, burning sensation, and fever are present; brought about by vitiation of the blood	A type of venereal disease; possibly gonorrhoea	Only palliative treatment, but no radical cure can be attempted Treatments described for the *vātaja*, *kaphaja* and *pittaja* forms of the disease are judiciously applied in turn in the hope of recovery and radical cure
(v) ***Sannipātaja upadaṃśa***, ***Ni.*** **12, 13;** ***Ci.*** **19, 22**	Swelling, inflammation, suppuration and intense pain in the genitals, accompanied by deep ulcerations infested by parasitic growth. Urethral discharges of blood and morbid matter occur frequently; caused by the simultaneous derangement of all the humours	—	Incurable and fatal within a short time Palliative treatment as described for *duṣṭavraṇa* Surgical removal of the putrified portion of the male organ and the remaining portion cauterized by a heated metallic implement Cleansing, disinfection, and treatment as for *duṣṭavraṇa*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Urustambha, Ci. 5, 42 Also known as *āḍhyavāta*	Swelling of the thighs along with general lassitude, aching pain in the limbs, fever, goose-flesh, drowsiness. Sensation of cold, numbness, and lack of muscular co-ordination in the thighs; caused by the deranged *vāyu* by being surcharged with blood, fat and *kapha*	—	The patient is given a decoction of selected drugs in warm water or a linctus containing bitter drugs and three myrobalans. An internal medicine containing mineral sulphides suspended in cow's urine is also given. Medicinal plasters are also recommended. Diet should consist mainly of easily digested vegetables, good quality rice, stewed meat with fats or salt General measures recommended for *vātavyādhi* are also employed
Valmīka, Ni. 13, 8; *Ci.* 20, 27, 28	Hard, conical eruptions on the soles, palms, joints, neck and head; the affected area increases slowly. Running sores also gradually form around the eruptions, along with pain, itching, and burning sensation	—	Treatment as described for *visarpa* Affected parts should be surgically scraped and cauterized Purification and treatment as described for *arbuda*
Vartma-gata-roga, Utt. 3, 2; 8, 4-5 Twenty-one types: ***utsaṅginī, kumbhīkā, pothakī, vartmaśakarā, arśavartma, śuṣkārśas, añjana, bahalavartma, vartmāvabandha,***	Diseases affecting the eyelids with specific symptoms for different types named	—	Treatment by different surgical operations of the surface layer; specific treatment as described in each type

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Vartma-gata-roga (*Contd.*) *kliṣṭavartma, kardamavartma, śyāvavartma, praklinna, apariklinna, vātāhatavartma, arbuda, nimeṣa, śoṇitārśas, lagaṇa, visavartma, pakṣma-kopa*			
(i) *Utsaṅginī, Utt.* 3, 3; 8, 5; 13, 6	A hard and uneven boil or eruption on the exterior surface of the lower eyelid	—	Treatment by surgical scarification of the surface layer, after a small and careful incision Fomentation, ointments, and general healing measures
(ii) *Kumbhīkā, Utt.* 3, 3; 8, 4; 13, 6 Also known as *kumbhī-kinī* and *kumbhika-piḍaka*	A number of seed-like cysts or boils along with general local inflammation of the conjunctiva	A type of conjunctivitis	As above
(iii) *Pothakī, Utt.* 3, 5; 8, 5; 13, 6	A number of hard and red pustules or boils of the size of mustard seeds on the inner surface of the eyelids; attended with pain, itching, and discharges	—	Treatment by scraping followed by scarification of the surface layer; general healing measures adopted
(iv) *Vartmaśarkarā, Utt.* 3, 3, 6; 8, 5; 13, 6	A rough, hard, and large pustule, surrounded by other small pustules covering the inner surface of the eyelids, attended with pain and local inflammation	—	Treatment as described for *utsaṅginī*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(v) *Arśavartma*, *Utt.* 3, 7; 8; 3	Extensive eruption of soft papillary growth, with slight pain, on the inner surface of the eyelids	—	Treatment by surgical excision followed by general healing measures
(vi) *Śuṣkārśas*, *Utt.* 3, 8; 8, 3; 15, 11-12	A number of long, rough and hard papillary growths, without sensation, on the inner surface of the eyelids	—	Treatment by surgical excision followed by usual healing process as described in *Utt.* 15, 12
(vii) *Añjana*, *Utt.* 3, 9; 8, 6; 14, 4	A small, soft, copper coloured pustules on the upper eyelid, attended with burning and pricking sensation	—	Hot fomentation and draining of the pus formed. Complete draining obtained by rubbing briskly with a plaster, prepared with vegetable, mineral substances, and salt If draining of pus does not occur surgical incision is made Application of healing salves and collyrium described
(viii) *Bahalavartma*, *Utt.* 3, 10; 8, 4; 13, 6	Extensive growth of uniform sized pustules covering the eyelids	—	Treatment as described in *pothakī*
(ix) *Vartmāvabandha*, *Utt.* 3, 3, 11; 13, 6	Inflammation and swelling of the eyelids with slight pain, constant itching and difficulty in opening the eyes	—	As above
(x) *Kliṣṭavartma*, *Utt.* 3, 12; 8, 4; 13, 6	Inflammed, copper-coloured swellings of both eyelids with slight pain. There can be sudden bleeding from the swellings	—	,,

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(xi) *Vartmakardama, Utt.* 3, 3, 13; 8, 4; 13, 6 Also known as *kardamavartma*	Inflammed copper-coloured swellings on both eyelids, attended with slight pain. There may be sudden discharge of morbid matter from the swellings	—	Treatment by surgical scarification
(xii) *Śyāvavartma, Utt.* 3, 14; 8, 4; 13, 6 Also known as *śyāmavartma*	Dark colour of the eyelids, swelling, pain, burning sensation, constant itching, and slight discharge of pus	—	As above
(xiii) *Praklinna, Utt.* 3, 15; 11, 9; 12, 31-36	Desposit and discharge of mucus, pain, pricking sensation, and swelling localized on the eyelids	—	Use of special eye-collyriums containing green vitriol, cuttlefish bones, and antimony black (*Utt.* 11, 9) Use of special soothing eye-wshes, —eye-drugs, errhines, fumigation, eye-salves, and eye-collyrium (*Utt.* 12, 31-36)
(xiv) *Apariklinna, Utt.* 3, 3, 16; 12, 35	A sticking together of the eyelids even in the absence of any suppuration and with constantly washed in water	—	Local application of eye-salve as described in 12, 35
(xv) *Vātāhatavartma, Utt.* 3, 17; 9	Involuntary lower of the upper eyelids so as to obstruct vision with or without pain	—	Application of soothing and *vāyu*-subduing drugs
(xvi) *Vartmārbuda, Utt.* 3, 3, 18; 8, 4; 15, 11	Rapidly developing knotty and red swelling of various shapes and sizes on the inner surface of the eyelids, attended with slight pain	—	Treatment [illegible]rgical excision of the surface la[illegible] local application of powder p[illegible]ared with antimony and other substances as described in *Utt.* 15, 11

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(xvii) *Nimeṣa*, *Utt*. 3, 19; 9	Involuntary and rapid closing down and opening of eyelids without pain, swelling, or other symptoms	—	Application of soothing and *vāyu*-subduing drugs
(xviii) *Śoṇitārśas*, *Utt*. 3, 20; 8, 4	Persistent growth of soft and fleshy nodules on the eyelids, reappearing even after surgical removal	—	Treatment by surgical incision
(xix) *Lagaṇa*, *Utt*. 3, 21; 8, 6; 14, 3	A thick, hard, and slippery swelling of the size of a large pea-pod on the eyelid ; there is an itching sensation, but no pain or extension of swelling	—	Treatment by surgical incision after fomentation Application of powdered antiseptic drugs and honey In advanced cases cauterization is recommended
(xx) *Visavartma*, *Utt*. 3, 22; 8, 6; 14, 2	Inflammatory swelling and stiffening of the eyelid which is found to be dotted with minute punctures like the pores in the stem of a water soaked lotus plant	—	The suppurated portion is carefully fomented, and the puncture-like holes incised individually The operated portion dusted with medicated dusting powder, anointed with honey and clarified butter, bandaged and healing measures adopted until complete cure
(xxi) *Pakṣmakopa*, *Utt*. 3, 23; 8, 9; 16, 2-5	Stiffening and thickening of the eyelashes, making them rough, sharp and pointed, and causing pain and strong allergy to glare,	—	Relief is obtained by removal of the eyelashes. The disease is incurable, and only palliative measures are possible

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Pakṣmakopa (*Contd.*)	heat, and of strong winds		A horizontal incision is made on the affected eyelid, midway between the eyelashes and eyebrows After cleaning, careful suturing with horse mane ; application of honey and clarified butter; the part heals like a *vraṇa* After complete healing the horse mane is stitched off Cauterization is necessary if the above process is not conducive to healing
Vātaparyāya, *Utt.* 6, 15; 8, 6; 9,5 Also known as *vātaviparyaya*	A dull and intermittent pain in the eyelashes and the eyebrows, due to local aggravation of *vāyu*	—	Treatment as described for *anyatovāta*
Vātavyādhi, *Ni.* 1; *Ci.* 4, 1-2 Twenty-seven types: *duṣṭarakta* (four types), *ākṣepaka*, *apatānaka*, *daṇḍāpatānaka*, *dhanustambha*, *pakṣāghāta*, *apatantraka*, *manyāstambha*, *ardita*, *gṛdhrasī*, *viśvacī*, *kroṣṭukaśīrṣa*, *khañja*, *vātakaṇṭaka*, *pādadāha*, *pādaharṣa*, *aṃsaśoṣaka*, *avavāhuka*, *karṇaśūla*, *vādhirya*, *mūka*, *minmina*, *gadgada*, *tuni*, *ādhmāna*, *vātāṣṭhīlā*, and *pratyaṣṭhīlā*	Symptoms different with the different diseases named	Nervous and congenital diseases	Treatment consists of potions of medicated oily emulsions; poulticing and fomentation; douches, purgatives, skin applications; relieving congestion of the head by external applications and medicines; gargling; diet rich in milk, meat-soup, oil, clarified butter, fatty foods, acid fruits, salts; use of saffron and other drugs; wearing comfortable silken, woollen and cotton garments; living in a warm room not exposed to draughts; use of soft bed; discipline life and avoidance of excesses in any form

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
			Some prescriptions of drugs for internal and external use are described in *Ci.* 4, 21-27
(i) ***Duṣṭarakta, Ni.*** **1, 40-44** **Four types:** ***vātarakta, pittarakta, kapharakta,*** **and** ***sarvaduṣṭaśoṇita***	Vitiation of the entire blood system due to aggravation of all three humours. Perspiration, discoloration, and anaesthesia starting with the lower extremities gradually extending all over the body	Blood-poisoning	General treatment as described under *vātavyādhi*. Specific treatment as prescribed for each type
(a) ***Vātarakta, Ni.*** **1, 42;** ***Śā.*** **8, 28;** ***Ci.*** **5, 2-18** **Also known as** ***mahāvātavyādhi***	Vitiation of blood due to aggravated *vāyu;* hyperaesthesia, pricking and piercing sensation in the legs; in the final stage paralysis of the leg muscles, loss of local sensation, withering, and atrophy of muscles. If left untreated, a permanent deformity and withering of the leg muscles occur	Gout	Venesection recommended as first-aid General treatment as described under *vātavyādhi* Special diet of goat's milk with honey, sugar, and cooling drugs Many prescriptions for internal and external use, specific with various stages and types of the disease, are described in *Ci.* 5, 6-18
(b) ***Pittarakta, Ni.*** **1, 42**	Vitiation of blood due to aggravated *pitta*. The legs become red, hot, soft and swollen with extreme burning sensation	—	
(c) ***Kapharakta, Ni.*** **1, 43;** ***Ci.*** **4**	Vitiation of blood due to aggravated *kapha*. The legs are swollen, numb, cold to the touch and whitish in colour with excessive itching sensation	—	Treatment as described under *vātarakta*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(d) *Sarvaduṣṭarakta, Ni.* 1, 44	In this type the legs exhibit symptoms which are respectively peculiar to all the three preceding types; caused by the simultaneous aggravation of three humours	—	Treatment as described under each preceding types
(ii) *Ākṣepaka, Ni.* 1, 46, 51; *Ci.* 4	Spasms and convulsive jerks, loss of consciousness and sensory perceptions; caused by deranged *vāyu* by its single action or by combining with the *pitta* and *kapha* humours; also caused by external injury or blow	—	Treatment as described under *vātavyādhi*
(iii) *Apatānaka, Ni.* 1, 46, 52; *Ci.* 5, 24-27	Epileptic fits, without convulsions due to deranged *vāyu;* also caused from excessive haemorrhage, abortion or miscarriage at pregnancy, and external blow and injury. This is incurable	Tetanus	Treatment as described under *vātavyādhi* Special prescriptions for internal and external use
(iv) *Daṇḍāpatānaka, Ni.* 1, 46; *Ci.* 4	Epileptic fits with spasms and convulsions due to aggravated *vāyu* and *kapha*. The body loses its power of movement, becoming stiff and rigid; paralysis of the jaw muscles	Orthotonos	Cure possible only in rare cases; palliative treatment as described under *vātavyādhi*
(v) *Dhanustambha, Ni.* 1, 48; *Ci.* 4 Two types: *antarāyāma* (inward curving-em-	The body becomes stiff, rigid, and bent like bow, due to aggravated *vāyu*. Eyes become fixed in sockets, the jaws are locked;	Tetanus (?)	Treatment as described under *vātavyādhi*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
prosthotonos) and *vahirāyāma* (outward curving-opisthatonos)	discharge of slimy mucus from the mouth at intervals; excruciating and breaking pain in chest, waist and thighs		
(vi) ***Pakṣāghāta***, ***Ni.*** **1, 53; *Ci.* 5, 28**	One side of the body (all muscles, nerves, joints, etc.) becomes useless and inoperative due to the aggravated *vāyu*, affecting the nerves and channels on one side of the body. Loss of all sensibility, but not of consciousness	Hemiplegia	Treatment as described under *vātavyādhi;* special poultices, oily massages, and dry fomentation are described in *Ci.* 5, 28
(vii) ***Apatantraka***, ***Ni.*** **1, 56; *Ci.* 5, 30**	Convulsions, due to excited *vāyu* going through wrong channels; involuntary movement on extremities, groaning, fixed stare, loss of perceptions, partial asphyxia and difficult breathing	Hysteria	Treatment as described under *vātavyādhi*. Emesis and douches are forbidden. If the respiratory passage is blocked, it should be blown open forcibly. Special prescriptions for internal use
(viii) ***Manyāstambha***, ***Ni.*** **1, 57; *Ci.* 5, 29**	Stiffness of neck, due to agitation of local *vāyu*	Torticolis	Treatment as described under *vātavyādhi* Special massage oils, errhines, poultices, and douches, as well as dry fomentation are recommended in *Ci.* 5, 29
(ix) ***Ardita***, ***Ni.*** **1, 58; *Ci.* 4, 5, 31-34**	Distortion of the facial muscles, due to local action of aggravated *vāyu* or due to excessive loss of blood; bending and distortion of neck and one side of the face. Shaking of head and slurred	Facial paralysis	Treatment as described under *vātavyādhi*. Special prescriptions for internal and external use

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Ardita (*contd.*)	speech; change in the shape of eyes; anaesthesia and lock-jaw in advanced stage		
(x) *Gṛdhrasī*, *Ni.* 1, 59; *Śā.* 8, 29-33; *Ci.* 4	Loss of power of locomotion of legs due to the aggravated *vāyu* affecting the major nerves of the thighs	Sciatica	Venesection General treatment as described under *vātavyādhi*
(xi) *Viśvacī*, *Ni.* 1, 60; *Ci.* 4	Loss of movement and muscular action of one or both arms, due to aggravated *vāyu* affecting the major nerves of the upper arms	Erbe's paralysis or brachial neuralgia	Treatment as described under *vātavyādhi*
(xii) *Kroṣṭukaśīrṣa*, *Ni.* 1, 61; *Śā.* 8, 29; *Ci.* 5, 33	Extremely painful swelling in the knee-joints, due to the concerted action of deranged *vāyu* and vitiated blood	——	Local venesection General treatment as described under *vātavyādhi*
(xiii) *Khañja*, *Ni.* 1, 62; *Śā.* 8, 29; *Ci.* 5, 33 Two types: ***paṅgu*** and ***kalāyakhañja***	Permanent contraction of the nerves and muscles of one leg, due to aggravated *vāyu* affecting the waist	Monoplegia	As above
(a) ***Paṅgu***, *Ni.* 1, 62; *Śā* 8, 29	Permanent contraction of the nerves and muscles of both legs, due to aggravated *vāyu* affecting the waist	Paraplegia	,,
(b) ***Kalāyakhañja***, *Ni.* 1, 63; *Ci.* 5, 33	Limping, involuntary jerking of leg muscles, and looseness of bone joints of the legs, due to deranged *vāyu* affecting the waist	Lathyrism	Treatment as described for *khañja*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(xiv) *Vātakaṇṭaka*, *Ni*. 1, 64; *Śā*. 8, 28	Swelling and accumulation of blood in insteps and ankles, due to stumbling on uneven ground	—	Local venesection General treatment as described under *vātavyādhi*
(xv) *Pādadāha*, *Ni*. 1, 65; *Śā*. 8, 27	Burning sensation in the soles of the feet by the joint action of deranged *vāyu*, *pitta*, and blood	—	General treatment as described under *vātavyādhi* Venesection of the local vein
(xvi) *Pādaharṣa*, *Ni*. 1, 66; *Śā*. 8, 27	Tingling pain and loss of touch-sensibility in the lower parts of the legs, due to joint action of deranged *vāyu* and *kapha*	—	As above
(xvii) *Aṃsaśoṣaka*, *Ni*. 1, 67; *Ci*. 4	Stiffness and loss of movement of the shoulder joints due to the aggravated *vāyu*, drying up of the fluids lubricating these joints	—	Treatment as described under *vāta vyādhi*
(xviii) *Avavāhuka*, *Ni*. 1, 67; *Śā*. 8, 27; *Ci*. 9	Permanent contraction of the nerves and muscles of one or both arms, due to aggravated *vāyu* affecting the shoulders	—	Venesection avoiding the puncturing of vulnerable parts General treatment as described under *vātavyādhi*
(xix) *Karṇaśūla*, *Ni*. 1, 69 see *karṇaroga*			
(xx) *Vādhirya*, *Ni*. 1, 68 see *karṇaroga*			

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(xxi) *Mūka*, *Ni.* 1, 70; *Ci.* 4	Blocking of the speech centres and nerves which conduct articulated sound by deranged *vāyu* saturated with deranged *kapha* resulting complete or partial loss of speech	Dumbness	Treatment as described under *vāta-vyādhi*
(xxii) *Minmina*, *Ni.* 1, 70; *Ci.* 4	Partial blocking of the nerves and passages which convey speech by deranged *vāyu* and *kapha*, resulting nasal intonation of speech	Nasal voice	As above
(xxiii) *Gadgada*, *Ni.* 1, 70; *Ci.* 4	Partial blocking of the nerves and channels which convey articulated sound caused by deranged *vāyu* and *kapha*; results in permanently indistinct speech	A type of throat disease	,,
(xxiv) *Tūṇī*, *Ni.* 1, 71; *Ci.* 5, 39 One type: *pratitūṇī*	Pain originating in the bowels or the bladder, causing acute discomfort in the anal and genital region, due to aggravated *vāyu*	—	Internal use of potion and pill as described in *Ci.* 5, 35, 39; use of enemas
(a) *Pratitūṇī*, *Ni.* 1, 72	Pain originating in the bowels or the bladder and extending to the intestinal region, due to aggravated *vāyu*	—	Treatment as described for *tūṇī*
(xxv) *Ādhmāna*, *Ni.* 1, 73; *Ci.* 5, 36 One type: *pratyādhmāna*	Distension of the abdomen due to trapped intestinal gas formation and intense local pain with rumbling sound caused by aggravated *vāyu* trapped inside	Tympanitis of the abdomen	Treatment as described for *vāta-vyādhi* Internal use of appetizing drugs; use of rectal-douches and suppositories

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
			for complete cleansing. Afterwards a complete fast and the abdomen fomented. A light diet with use of digestive aids recommended
(a) *Pratyādhmāna*, *Ni*. 1, 74	A case of *ādhmāna* marked by oppressive feeling about the heart and pain at the sides; caused by the incarceration of *vāyu* in the stomach	Gastro tympanitis	Treatment as described for *ādhmāna*
(xxix) *Vātāṣṭhīlā*, *Ni*. 1, 75	A knotty stone-like tumour of an elevated shape and extended in an upward direction, fixed or mobile in nature below the umbilicus and obstructing the emission of flatus and evacuation from bowel; caused by deranged *vāyu*	—	Treatment as described under *vātavyādhi*
(xxx) *Pratyaṣṭhīlā*, *Ni*. 1, 76	A hard knotty tumour visible on the surface of the abdomen which obstructs movement of bowels, intestinal winds and urine. The tumour has its apex upwards and may be fixed or mobile	—	As above
Vidārika, *Ni*. 13, 19; *Ci*. 20, 8-9	A round reddish swelling appearing on the auxiliary or inguinal regions in the shape of gourd; caused by the concerted action of the three deranged humours	—	Fomentation, massage, purification, and disinfections if the abscess is in suppurating stages, followed by special drugs

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Vidārikā (*Contd.*)			Bleeding by surgery or by application of leeches, followed by plastering
			If fully suppurated, the tumour should be lanced, plastered, and bandaged; healing remedies are then applied
Vidradhi, *Ni*. 9; *Ci*. 16 Six types: *vātaja*, *pittaja*, *kaphaja*, *sannipātaja*, *kṣataja*, and *asṛja* or *raktaja*	Deep seated, painful, protuberant swellings vitiating the skin, blood, muscles and fat; caused by aggravated humours	Abscess	Treatments as described under each type of the disease
(i) *Vātaja vidradhi*, *Ni*. 9, 5; *Ci*. 16, 3-6	Rough and hard boils and abscesses of deep red to black colour with exruciating pain, caused by deranged *vāyu*. The boil grows and suppurates gradually with slow and thin oozings	—	A thick plaster containing oils and fats is applied warm. A poultice containing flesh of aquatic animals is also applied and the affected place frequently fomented
			If there is a tendency to suppuration, this should be encouraged by application of drugs, followed by surgical lancing
			The ulceration produced by incision is treated as described under *vraṇa*. Special cleaning preparations in *Ci*. 16, 5-6
(ii) *Pittaja vidradhi*, *Ni*. 9, 6; *Ci*. 16, 7-10	Rough, hard and painful swellings of brown to deep coffee-colour with fever; caused by deranged	—	A special plaster of drugs compounded with milk and the affected area washed with cold infusion of drugs.

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
	pitta. Growth and suppuration are usually rapid, and there is constant oozing of a yellowish discharge		Linctus of honey and emblic myrobalan is recommended
			The boil is bled by application of leeches, if unsuppurated
			A suppurated boil is lanced and treated as described under *vraṇa*
			Special medicines for external and internal use as described in *Ci.* 16, 7-10
(iii) *Kaphaja vidradhi, Ni.* 9, 7; *Ci.* 16, 12	Flat, circular and large swelling of light colour, and soft to the touch. Growth and suppuration are very slow, but numbness, itching and slight pain with thin secretions of white colour develop Caused by deranged *kapha*	—	Affected area is fomented with heated brick, sand, iron, cow-dung, iron ashes, and cow's urine
			Emetics and medicinal decoctions are used for internal and external cleansing
			Plasters and poultices are applied, and the local vitiated blood drawn out by contrivance known as *alāvuyantra*
			When suppurated, the abscess is lanced, washed, disinfected and healed by general methods, described under *vraṇa*, and by special preparations described in *Ci.* 16, 12

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(iv) *Sannipātaja vidradhi*, *Ni.* 9, 8; *Ci.* 16, 21	Large irregularly shaped swelling, suppurating only at some points of various colours and with different types of discharges and with excruciating pain; caused by the simultaneous derangement of all the humours	—	Treatment should be a judicious combination of the methods described for *vātaja*, *pittaja*, and *kaphaja* types of the disease Bleeding by venesection in the arms is also recommended
(v) *Kṣataja vidradhi*, *Ni.* 9, 9; *Ci.* 16, 14 Also known as *āgantuja vidradhi*	Abscesses and swelling, due to injuries, dirt, etc., with fever and burning sensation	—	Treatment as decribed under *pittaja vidradhi*
(vi) *Raktaja vidradhi*, *Ni.* 9, 10; *Ci.* 16, 14	Rapidly developing and suppurating abscess and boil of deep maroon to black colour; caused by vitiation of blood. Fever and burning pain are present	—	Treatment as described for *pittaja vidradhi*
Vilambikā, *Utt.* 56, 6-8	Burning sensation, partial loss of consciousness, vomiting, eyes sunk in their sockets, dark hue on nails, lips and teeth, feeble-voice, loose feeling in joints, and usual symptoms of *visūcikā*	Gastro-intestinal irritation	Treatment as described for *visūcikā*
Vipadikā, *Ni.* 5, 10; *Ci.* 25, 20, 21	Dermatitis with excessive itching and sharp pain, the skin of the insteps and the upper area of the feet being dry and cracked	A type of psoriasis	No specific treatment is recommended. Treatment as described for *vicarcikā* may give some relief

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Visarpa, *Ni*. 5, 9; *Śā*. 8. 27; *Ci*. 17, 2 Five types: *vātaja*, *pittaja*, *kaphaja*, *sannipātaja*, and *kṣataja*	Rapid spread of elongated patches of dermatitis over extensive areas of the skin, affecting also the flesh and blood beneath the local skin; a burning sensation, sharp pain, and loss of consciousness	Erysipelas	Venesection is recommended as first-aid General treatment as described under *kṣudrakuṣṭha* and *duṣṭavraṇa* Special treatment of the different types described under the diseases named
(i) *Vātaja visarpa*, *Ni*. 10, 3; *Ci*. 17, 3	Soft, rough surface; extensive swelling of blackish colour attended with piercing pain and fever. Flame-coloured vesicles later appear over the affected area; caused by deranged *vāyu*	—	General treatment as described under *visarpa* Special medicines and applications described in *Ci*. 17, 3.5
(ii) *Pittaja visarpa*, *Ni*. 10, 4; *Ci*. 17, 4-5	Extensive swellings, rapidly spreading all over the body with suppuration, cracking of the skin, burning sensation, and fever. The swellings may develop a blood-red colour, and a large number of vesicles of the same colour may develop over the affected parts; caused by deranged *pitta*	—	General treatment as described under *visarpa* Cold compress with cold water, milk, dilute cane-sugar solution, diluted honey, etc. Special plasters and medicines described in *Ci*. 17, 4
(iii) *Kaphaja visarpa*, *Ni*. 10, 5; *Ci*. 17, 7-8	Slowly grouing and slowly suppurating swellings of white and glossy appearance marked by slight pain and itching; caused by deranged *kapha*		General treatment as described under *visarpa* Blood-letting and purifying measures and treatment as for *vrana*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Kaphaja visarpa (Contd.)			Special applications and medicines described in *Ci.* 17, 7
(iv) *Sannipātaja visarpa, Ni.* 10, 6; *Ci.* 17, 2-8	Deep-seated swellings which rapidly extend all over the body, caused by simultaneous derangement of all the three humours; other symptoms are not constant but pain is always present; suppuration and destruction of local tissues	—	Incurable Treatment follows a judicious mixture of those described for the *vātaja, pittaja,* and *kaphaja* forms of the disease
(v) *Kṣataja visarpa, Ni.* 10, 7; *Ci.* 17, 4-5	Reddish-brown extensive swelling which develops rapidly after a local wound with quick suppuration, high fever, burning sensation, and black vesicles appearing over the affected areas	—	Treatment as described for *pittaja visarpa*
Visphoṭaka, Ni. 13, 14; *Ci.* 20, 5	Boils over particular areas or all over the body with burning sensation and fever; caused by vitiated blood and *pitta*	—	Treatment as described for *pittaja visarpa* Special treatment as prescribed for *vivṛta*
Visūcikā, Utt. 56, 3-12	Fainting, loose motions, vomiting, excessive thirst, colic pain, cramps, vertigo, pallor of complexions, cardiac pain, and headache; caused by intemperate eating	Gastro-intestinal irritation	Dry fomentation of the abdomen, application of strong heat to the heels, and emesis followed by complete fasting Digestive mixtures, nutritive enemas, and internal medicines are recommended

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
			After the relief of acute symptoms easily digested and appetizing food and drink should be taken
Vivṛta, *Ni*. 13, 6; *Ci*. 20, 5	Extensive eruptions of dark-brown, flat-topped pustules in circular patches ; extreme burning sensation	—	Treatment as described for *pittaja visarpa* Special treatment with drugs in the suppurating stage of the eruptions is prescribed
Vraṇa, *Sū*. 21, 49; *Ci*. 1 Two types: *śārīra* (idiopathic) and *āgantu* (traumatic). The former is subdivided into sixteen types according to the morbid diathesis either severally or in combinations	Ulcers with discharges, discolouration, pain, gradual destruction of tissues, secondary eruptions, bleeding, suppuration, etc.	A general term for wounds, ulcerations or suppurations	Treatment consists of restricted diet, ointments, local washing, fomentation, poultices, local massage, draining off morbid discharges, inducing suppuration by drugs, emetics, purgatives, bleeding, surgical treatment followed by suturing at proper time; use of drugs (for arresting bleeding, for cooling and healing; use of plasters, lints, dusting powders, fumigation, cauterization; use of tonics and antiseptic medicines for general healing; bandaging; use of mechanical contrivances for restricting movement
(i) *Śārīravraṇa*, *Ci*. 1, 2-4; 23 Sixteen types: *vātaja*, *pittaja*, *kaphaja*, *raktaja*, *vāta-pittaja*, *vāta-śleṣmaja*, *pitta-śleṣmaja*, *vāta-śoṇita*,	Symptoms as described under each type	—	Treatment consists of both medical and surgical measures. These are sixty-three in numbers including *śodhana* (cleansing), *ropaṇa* (granulation), eight surgical acts like *chedana* (excision), *bhedana* (inci-

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
pitta-śoṇitaja, śleṣma-śoṇitaja, vāta-pitta-śoṇitaja, vāta-śleṣma-śoṇitaja, śleṣma-pitta-śoṇitaja, vāta-pitta-kaphaja, vāta-pitta-kapha-śoṇitaja, and *śuddhavraṇa*			sion), *dāraṇa* (bursting), *lekhana* (scraping), *āharaṇa* (extraction), *eṣaṇa* (probing), *vyadhana* (puncturing), *vidrāvaṇa* (inducing discharges), and *sīvana* (suturing)
(a) *Vātaja vraṇa*, *Ci.* 1, 6	The ulcer assumes brown or vermilion colour, exudes thin, slimy and cold secretion; attended with pricking and piercing pain; caused by the derangement of *vāta*	—	Treatment as described for *śārīravraṇa*
(b) *Pittaja vraṇa, Ci.* 1, 7	The growth of ulcer in *pitta* aggravated cases is rapid; it is bluish yellow colour and exudes a hot secretion; attended with burning suppuration and redness, and with small yellow coloured pustules surrounding the principal ulcer	—	As above
(c) *Kaphaja vraṇa, Ci.* 1, 8	The ulcer in *kapha* aggravated type is big in size. grey-coloured, slightly painful, hard and heavy, and accompanied by an irresistible itching sensation; encircled with a large number of vessels and membraneous tissues, exudes	—	,,

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
	thick, cold, white, and slimy secretions		
(d) *Raktaja vraṇa*, *Ci.* 1, 9	The ulcer caused from the vitiation of blood, shows the symptoms of *pitta* origined type along with coral-redness of the ulcer, often surrounded by black vesicles and pustules; painful and causes bleeding	—	
(e) *Vāta-pittaja vraṇa*, *Ci.* 1, 10	The ulcer due to the concerted action of *vāyu* and *pitta* is marked by a pricking and burning pain with a red or vermilion appearance; attended with a feeling of fumes arising out of it; exudes secretion similar to the characters of both *vāyu* and *pitta* aggravated types	—	
(f) *Vāta-śleṣmaja vraṇa*, *Ci.* 1, 11	A feeling of itching and piercing pain with a heavy indurated ulcer, constantly discharging a cold, slimy secretion, are the symptoms of *vāyu* and *śleṣma* aggravated types	—	
(g) *Pitta-śleṣmaja vraṇa*, *Ci.* 1, 12	The ulcer due to the deranged conditions of *pitta* and *śleṣma*, is heavy, hot, and yellow; attended with burning sensation and exudes a pale-yellow coloured		

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Pitta-śleṣmaja vraṇa, (*Contd.*)	secretion; the characters of *pitta* and *śleṣma* aggravated types are also present here		
(h) *Vāta-śoṇitaja vraṇa, Ci.* 1, 13	The ulcer in this type caused from the aggravation of *vāyu* and blood, is dry and thin; accompanied by a piercing pain and local anaesthesia; exudes blood or vermilion-coloured secretion and is also marked by the combined hues of *vāyu* and blood		Treatment as described for *śārīravraṇa*
(i) *Pitta-śoṇitaja vraṇa, Ci.* 1, 14	The colour of the ulcer due to the combined action of deranged *pitta* and blood, resembles to the surface cream of clarified butter; it emits the odour of washing of fish; it is soft and spreading, exudes hot blackish secretion	—	As above
(j) *Śleṣma-śoṇitaja vraṇa, Ci.* 1, 15	The ulcer is red-coloured, heavy, slimy, glossy and indurated; marked by itching and exudes a yellowish bloody secretion; caused by the combined action of *śleṣma* and blood	—	,,
(k) *Vāta-pitta-śoṇitaja vraṇa, Ci.* 1, 16	This type of ulcer caused from the concerted action of *vāyu*, *pitta* and blood, is attended with a sort of throbbing, pricking, and burning pain; secrets a flow of thin yellowish blood	—	

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(l) *Vāta-śleṣma-śoṇitaja vraṇa*, *Ci.* 1, 17	The ulcer, due to the concerted action of *vāyu*, *śleṣma* and blood, is attended with itching and throbbing sensations, and thick, grey, blood streaked discharges	—	,,
(m) *Śleṣma-pitta śoṇitaja vraṇa*, *Ci.* 1, 18	The ulcer, due to the combined action of *śleṣma*, *pitta* and blood, is characterised by redness, itching, suppuration, and burning sensation. It discharges a thick greyish, bloody secretion	—	,,
(n) *Śleṣma-pitta kaphaja vraṇa*, *Ci.* 1, 19	The ulcer of this type associated with diverse kinds of pain, secretion, colour, etc., peculiar to each of the three aggravated bodily *doṣas*	—	,,
(o) *Vāta-pitta-kapha śoṇitaja vraṇa*, *Ci.* 1, 20	The ulcer of aggravated conditions of *vāyu*, *pitta*, *kapha* and blood, is accompanied by burning sensation with complete anaesthesia in the locality; redness, suppuration, pain, and secretion are the other symptoms	—	,,
(p) *Śuddhavraṇa*, *Ci.* 1, 21-23	A contused and deep-red swelling which is 'clean' in the sense that there is no pain, secretions, discharges, or roughness of the surface	Contusion	Treatment consists of cooling, pacifying and emollient measures as described in *vraṇa*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(ii) *Āgantuvraṇa*, *Sū*. 21, 49; *Ci*. 1, 2-3	Injuries and wounds of traumatic origin, leading to bleeding, ulcerations and sometimes suppuration. If unhealed for a week or more, it becomes an ordinary ulcer	Wounds	First-aid consists of cooling and pacifying measures; application of a paste of honey and clarified butter over the affected part. Healing treatment same as described in *vraṇa*
Vṛddhi, *Ni*. 12, 3-6; *Śā*. 8, 39; *Ci*. 19, 2-12 Seven types: *vātaja*, *pittaja*, *kaphaja*, *raktaja*, *medaja*, *mūtraja*, and *antravṛddhi*	Swelling and inflammation of the spermatic cord, testes or scrotum due to deranged humours; the scrotum may be enlarged to a very big size, discoloured, suppurated, and covered with black veins. There may also be a rapid increase in swelling along with fever, sensation of heat, itching, painful urination, and local pain	Hydrocele, hernia and scrotal tumours, etc.	Local venesection Complete avoidance of riding on horses, physical strain, fasting, rapid walking, unnatural postures, restrained of urges for natural evacuation, heavy meals, and sex activity Fomentation, purgatives, plasters of medicinal drugs, enemas, and special diet are recommended and described If there is suppuration, it should be allowed to mature and then an incision made avoiding the median line of the perineum; antiseptic and healing process as for *vraṇa*
(i) *Vātaja vṛddhi*, *Ni*. 12, 5; *Ci*. 19, 3	The scrotum is distended with a roughness of its surface; attended with pains peculiar to the aggravation of *vāyu*	—	External application of cooling and soothing substances Use of poultice and plasters prepared from *vāyu*-subduing drugs in the affected part

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
			Intake of specially prepared potion of vegetable oil and milk; meal consists of boiled rice and meat soup
			In case of suppuration incision is to be made by avoiding the median line of the perineum
(ii) *Pittaja vṛddhi*, *Ni.* 12, 5; *Ci.* 19, 4	The disease is marked by swollen scrotum assuming the colour of a ripe *audumbara* fruit; attended with fever, a burning sensation in the affected part; caused by the aggravation of *pitta*	—	In case of non-suppuration, treatment should be in the line of *pittaja-granthi*
			Incision of the affected part followed by purification with honey is prescribed in suppurated stage
(iii) *Kaphaja vṛddhi*, *Ni.* 12, 5; *Ci.* 19, 6	The scrotum is hard and cold to the touch; attended with little pain and itching in the affected part; caused by deranged *kapha*	—	Use of poultice prepared from heat-producing drugs and cow's urine
			Intake of potion prepared from decoction of *dāruharidrā* and with cow's urine
			In case of suppuration, opening of the tumour and disinfecting the incidental ulcer with oil boiled with vegetable substances are prescribed
(iv) *Raktaja vṛddhi*, *Ni.* 12, 5; *Ci.* 19, 5	The scrotum is covered with black vesicles along with the other symptoms peculiar to the *pittaja* type; caused by the vitiation of blood	—	Blood-letting by leeches
			Remedial measures both in suppurated and non-suppurated stages are prescribed in line of *pittaja* type

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(v) *Medaja vṛddhi*, *Ni*. 12, 5; *Ci*. 19, 7	The swollen scrotum appears like the ripe *tāla* fruits; it is soft, glossy, and slightly painful	—	Fomentation and plastering of the affected part before surgical operation Incision of the tumour by carefully avoiding the two testes and the median line of the perineum Removal of the morbid products; application of rock-salt and sulphate of iron in the affected part and then bandaging it Healing measure consists of an oil boiled with prescribed drugs
(vi) *Mūtraja vṛddhi*, *Ni*. 12, 5; *Ci*. 19, 8	Softness and fluctuation on the surface of swollen part; painful urination and pain in the testes; caused by the voluntary retention of urine	—	Fomentation followed by bandaging the swollen scrotum Puncture is made in the bottom of the sac on either side of the raphe of the perineum A tube open at both sides should be inserted in the affected part to draw out the morbid matter, this is followed by bandaging of the affected part
(vii) *Antravṛddhi*, *Ni*. 12, 6; *Ci*. 19, 9-11	Doubling up of a part of the lower intestine, due to sudden physical exertions, lifting of big loads, falls, etc. The part des-	Hernia (inguinal or strangulated)	Normally incurable, but palliative measures are possible

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
	cends into the inguinal region and may become knotted (or strangulated) and may also descend into the scrotum giving rise to intense swelling and pain. The doubled and knotted part may move up and down with a gurgling sound		General treatment as described for *vṛddhi* If the colon has descended to the inguinal region, it should be cauterized with a hot rod to prevent its descent into the scrotal sac, which makes the disease incurable The thumb of the hand opposite to the hernia should be incised and cauterized The veins of the temples on the opposite side should be opened for venesection
Vṛṣaṇakacchū, ***Ni.*** **13, 44; *Ci.* 20, 30**	Eczema on the skin of the scrotum, due to lack of cleanliness. May develop into a running eczema or sores	—	Treatment as described for ***ahipūtanā***
Vṛttaphala, ***Sū.*** **11, 17**	Upward displacement of the uterus	Retroversion of the uterus	Treatment as described for ***apavṛttaphala***
Vyaṅga, ***Ni.*** **13, 38; *Ci.* 20, 21; 25, 20-21**	Circular brown patches or stains appearing suddenly on the face of a person after hard physical exercise or strong emotions	A type of capillary angiomata or naevi	Venesection of the veins of the temples Massage with powdered and dried cuttle-fish bones, followed by plastering with a special composition (*Ci.* 20, 21) A special complexion cream for the face described in *Ci.* 25, 20 for regular use

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Yauvanapiḍaka, Ni. 13, 31; *Ci.* 20, 22 Also known as *mukhadūṣaka*	Pimples and pustules in the shape of thorn of a *śālmalī* tree appearing on the face of young persons	Acne vulgaris	A special plaster is recommended for regular use after effective emesis
Yavaprakhyā, Ni. 13, 4; *Ci.* 20, 4	Hard, thick and stiff pimples in the shape of *yava* affecting the epidermis, caused by deranged *vāyu* and *kapha*	—	Treatment as described for *andhālajī*
Yonivyāpat, Utt. 38, 4, 9--15 Nineteen types: *udāvarta, bandhyā, viplutā, pariplutā, vātalā, rudhirakṣarā, vāminī, prasraṃsinī, putraghnī, pittalā, atyanandā, karṇinī, caraṇa, śleṣmalā, ṣaṇḍī, phalinī, mahatī, sūcivaktrā,* and *sarvajā*	Abnormal condition, congenital defects or diseases of the female reproductive organ. Specific symptoms vary with the diseases named	Female diseases	Local application of oily medications, vaginal douches, cleaning fluids, tampons soaked in medicinal oils, and poultices, as general measure Diet should contain daily intake of wines of medicinal value, milk, butter, meat, and garlic juice every morning Special measures for specific symptoms of different diseases
(i) *Udāvarta, Utt.* 38, 5, 9-14	Painful and frothy menstruation caused by deranged *vāyu*	—	Treatment as described under *yonivyāpat*
(ii) *Bandhyā, Utt.* 38, 5, 9-14	Sterility marked by absence or suppression of the menstrual flow, sometimes accompanied by pain; caused by deranged *vāyu*	Sterility	As above
(iii) *Viplutā, Utt.* 38, 5, 9-14	Chronic and frequent local pain in the female private parts; caused by deranged *vāyu*		General treatment as described for *yonivyāpat*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
			Soothing and *vāyu*-subduing drugs given internally and applied externally to relieve pain
(iv) *Pariplutā*, *Utt*. 38, 5, 9-14	Intense local pain felt by the woman at the time of sexual intercourse; caused by the aggravation of *vāyu*	Retroversion or retroflexion of the uterus	Treatment as described for *yonivyāpat*
(v) *Vātalā*, *Utt*. 38, 5, 9-14	The inside at the vaginal passage is rough, cold and numb, and there is periodic and intense local pain; caused by the derangement of *vāyu*	—	General treatment as described for *yonivyāpat* Hot fomentation when the organ is rough, numb, and cold Soothing and *vāyu*-subduing drugs applied externally and internally to relieve pain
(vi) *Rudhirakṣarā*, *Utt*. 38, 6, 9-14 Also known as *lohitakṣarā*	Burning sensation inside the vaginal passage during menstruation	—	General treatment as described for *yonivyāpat*
(vii) *Vāminī*, *Utt*. 38, 6, 9-14	Escape of mixed semen and menstrual blood after sexual intercourse. The flow of liquid is accompanied with a gargling sound; caused by the action of deranged *pitta*	Actonomy cosis (?)	As above
(viii) *Prasraṃsinī*, *Utt*. 38, 6, 9-14	Prolapse of the uterus occurring after physical exertion, intercourse, or child-birth; caused by the action of deranged *pitta*	Prolapse of the uterus	General treatment as described for *yonivyāpat*

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
Prasraṃsinī (*Contd.*)			Swelling, displacement, or prolapse of the uterus treated by massage, fomentation, poulticing, and bandaging (*Utt.* 38, 14)
(ix) *Putraghnī*, *Utt.* 38, 6, 9-14	Chronic abortion marked by excessive menstrual flow during pregnancy; caused by the action of deranged *kapha*	Chronic abortion	General treatment as described for *yonivyāpat* Measures for *garbhacyūti* when actual abortion is imminent Filling up the vaginal cavity with powdered drugs of absorbent astringent, and disinfecting properties to reduce discharges and bad odour
(x) *Pittalā*, *Utt.* 38, 6, 9-14	Burning sensation, fever, and formation of pus inside the female organ along with usual symptoms of deranged *pitta*	—	General treatment as described for *yonivyāpat* General measures for relieving aggravation of the *pitta* humour Balls of disinfecting drugs kept inside the vaginal passage
(xi) *Atyānandā*, *Utt.* 38, 7	Excessive sexual desire in women due to deranged *kapha*	Nymphomania	Treatment as described for *yonivyāpat*
(xii) *Karṇinī*, *Utt.* 38, 7; 9-14	Vitiated blood on the membranes inside the female organ; also appearance of haemarrhoids and polyps inside the vagina; caused by the concerted action of three humours	—	General treatment as described for *yonivyāpat* Local application of plug-stick composed of paste of disinfectant drugs

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(xiii) *Caraṇa*, *Utt.* 38, 4 Two types: *acaraṇa* and *aticaraṇa*	Symptoms as described under each type; caused from the aggravation of *kapha*	—	Treatment as described under *yonivyāpat*
(a) *Acaraṇa*, *Utt.* 38, 7, 9-14	Copious white or mucous discharges in the vaginal passage during the sexual act; caused by deranged *kapha*	—	General treatment as described for *yonivyāpat* Filling up the cavity with powdered absorbent and astringent drugs to reduce secretion
(b) *Aticaraṇa*, *Utt.* 38, 4, 9-14	A type of sterility due to non-retention of the semen during the sexual act; caused by deranged *kapha*	A type of sterility	Treatment as described for *yonivyāpat*
(xiv) *Śleṣmalā*, *Utt.* 38, 7, 9-14	Coldness and itching sensation of the vaginal passage; also the symptoms of aggravated *kapha* in the system	—	General treatment as described for *yonivyāpat* Hot fomentation to relieve coldness and numbness of the vaginal passage Fumigation with burnt drugs to relieve itching
(xv) *Ṣaṇḍī*, *Utt.* 38, 8-12	Infantile condition of the female reproductive gland, non-appearance of maturity even in adult life, and roughness and pain in the vagina during sexual congress; incapacity to bear children; caused by the simultaneous derangement of the three *doṣas*	—	General treatment as described for *yonivyāpat* Hot fomentation to relieve numbness, coldness, and roughness of the vaginal passage Soothing and *vāyu*-subduing drugs applied externally and internally to relieve pain

Name, references; variations, if any	Description and symptoms in brief	English equivalent	Treatment in brief
(xvi) *Phaliṇī*, *Utt.* 38, 8, 9-14	Swelling, tenderness, and bleeding of a young woman's parts after intercourse, due to the simultaneous derangement of three bodily *doṣas*	—	General treatment as described for *yonivyāpat* Soothing and *vāyu*-subduing drugs to relieve pain Swelling, displacement, or prolapse treated by massage, fomentation, and bandaging Any bleeding wound treated as described for *sadyovraṇa*
(xvii) *Mahāyoni*, *Utt.* 38, 8 Also known as *mahatī*	An over-dilated vaginal orifice and passage; caused by the simultaneous derangement of the three *doṣas*	—	Treatment as described for *yonivyāpat*
(xviii) *Sūcivaktrā*, *Utt.* 38, 8, 10	An unusually narrow and constricted vaginal orifice; caused by the simultaneous aggravation of the three *doṣas*	—	General treatment as described for *yonivyāpat* Hot fomentation to cure numbness and coldness of the vaginal passage
(xix) *Sarvajā*, *Utt.* 38, 8, 9-14	Variety of grave symptoms developed in the female parts, due to simultaneous aggravation of the three *doṣas*	—	Treatment as described for *yonivyāpat*

TABLE VIII

Chemical and Physico-Chemical Terms

Name and references	English equivalent
Abhiṣavaṇa, Ci. 10, 8	Distillation
Abhisiñcana, Ci. 4, 23	Moistening by sprinkling
Amla, Sū. 11, 15	Acids; acidic substances
Antardhūma, Ci. 13, 11	Strong heating in a closed vessel; combustion in limited supply of air
Atidrava, Sū. 11, 9	Dilute solutions
Āvāpa, Ci. 10, 3	Throwing hot metal in liquid content
Avilepi, Ci. 31, 16	Non-sticky
Bhāvanā, Sū. 5, 39	Saturation
Dahana, Sū. 14, 32; *Ci.* 4, 24-26	Combustion
Dhūma, Ci. 33, 8	Fumes; smokes
Dhūpana, Sū. 37, 18	Fumigation
Drava, Sū. 46, 548	Fluid; solution
Dravya, Sū. 40, 2	Substance, which has a definite and continuous existence
Guṇa, Sū. 40, 10	Specific properties of drug
Jvalana, Sū. 29, 7	Ignition
Kalala, Śā. 2, 49	Jelly; a gel
Khara, Sū. 41, 5	Dry
Khinna, Ci. 32, 12	Boiled
Kledana, Sū. 41, 4	Moistening
Kṣāra, Sū. 1, 4; 11	Alkalis or alkaline solutions
Kṣārapāyana, Sū. 8, 9	Tempering of metals by alkaline solutions (for making them tough and flexible)

Name and references	English equivalent
Lavaṇa, Sū. 11, 15	Salts of any chemical composition
Loha, Ci. 10, 10-12	Any metal; iron
Manda, Sū. 41, 4	Mild; weak
Manthana, Sū. 45, 78	Churning
Mṛdukṣāra, Sū. 11, 6	Mild alkalis; dilute solutions of alkali
Paripīta, Ci. 10, 3	Soak
Parisrāvana, Sū. 11, 8; *Ci.* 10, 11	Filtration
Pariśuṣka, Śā. 8, 54	Fully dried; desiccated
Parivāpana, Sū. 11, 9	Concentration of liquids, or solutions, to desired volume
Paryyuṣita, Sū. 45, 189	Decantation
Patra, Ci. 10, 11	Leaves of metal
Phāṇita, Ci. 6, 13	Condensed decoction
Phena, Ci. 31, 17	Foam
Picchila, Sū. 11, 11; 46, 548	Unctuous; oily
Piṣṭasvedana, Ci. 27, 6	Steaming in solids
Prasāda, Sū. 45, 10	Cooling
Pravāta, Sū. 45, 12	Exposure to air
Puṭapāka, Utt. 18, 19	Prolonged heating in a sealed vessel (under pressure, generated inside)
Rūkṣa, Sū. 41, 5	Dry
Saṃskāra, Sū. 45, 181	Purification
Saṃyoga, Sū. 45, 181	Chemical combination
Sāndra, Sū. 11, 9	Thick viscous fluid
Sara, Sū. 41, 4	Mobile; fluid
Śītibhūta, Ci. 10, 7	Annealing

Name and references	English equivalent
Ślakṣṇa, Sū. 11, 11; 45, 548	Smooth
Snigdha, Sū. 41, 4	Oily
Śoṣaṇa, Sū. 11, 3; 41, 6; *Ci.* 10, 3 Syn.: *virūkṣaṇa*	Desiccation
Śṛtaśīta, Sū. 11, 11; 37, 19	Cooled after being boiled
Sthira, Sū. 41, 4	Firm
Sthūla, Sū. 41, 3	Stout
Stimita, Sū. 41, 4	Moist
Suloha, Sū. 8, 6	Metals in their pure forms
Svedana, Ci. 27, 6	Steaming
Tailapāyana, Sū. 8, 9	Tempering of metals by vegetable oils (for needles and puncturing instruments)
Tāpana, Sū. 41, 5	Rise of temperature
Tīkṣṇa, Sū. 41, 5	Sharp
Tīkṣṇakṣāra, Sū. 11, 6	Strong alkali solution
Udakapāyana, Sū. 8, 9	Tempering of iron by water (for cutting and cleaning tools)
Vipācana, Sū. 11, 8	Inducing chemical reaction by heating
Viśada, Sū. 41, 5; *Ci.* 31, 16	Pellucid
Vivikta, Sū. 41, 7	Porous
Yūṣa, Sū. 14, 30	Liquid extraction

TABLE IX

Physical and Mechanical Terms

Name and references	English equivalent.
Ākuñcana, Ni. 15, 4	Contraction
Āñchana, Sū. 7, 13	Bringing up to the surface
Ayaskānta, Śū. 27, 2	Magnetic substance; loadstone
Caturasra, Sū. 2, 3	Square
Cūṣaṇa, Sū. 7, 13	Suction
Gurutva, Sū. 41, 9	Density
Kīla, Sū. 7, 15	Bolt, pivot, or hinge-pin
Maṇḍala, Sū. 5, 11	Disc shaped; circular
Prapīḍana, Ni. 8, 2	Compression
Prasāraṇa, Ni. 2, 3; 15, 1	Expansion
Preṅkholana, Ni. 8, 2	Swinging motion (like a pendulum)
Pūraṇa, Utt. 38, 11	Filling with liquid
Ṛjukaraṇa, Sū. 7, 13	Straightening
Sarvatobhadraka, Ci. 8, 5	Cruciform in shape; pointing to all four directions
Sūkṣma, Sū. 41, 5	Fine, subtle
Suṣira, Sū. 41, 7	Porous
Tiryak, Sū. 5, 10	Transverse or diagonal; inclined at an angle
Unmanthana, Sū. 7, 13	Stirring or agitation
Unnamana, Sū. 7, 13	Raising
Vinamana, Sū. 7, 13	Lowering
Vivaraṇa, Sū. 7, 13	Expansion
Vivartana, Sū. 7, 13	Rotatory or cyclic motion.

TABLE X
Apparatus, Appliances and Instruments

Name, references; variations, if any	Description	Purpose	English equivalent
Adhikaraṇa, Sū. 41, 8	Any receptacle or container	For compounding or carrying out chemical reactions	—
Agravaktrayantra, Ci. 7, 13	Surgical hook or forceps, the points of which are bent at end, or the points of which are not too sharp	Extraction of the entire stone from the bladder after the operation in calculi	Hook; forceps
Alāvuyantra, Sū. 5, 3	A cup-shaped instrument made from the dried bark of the succulent fruit, *alāvu* (gourd)	Surgical bleeding	Cupping instrument
Anuśastra, Sū. 8, 11 Fourteen varieties:	Minor instruments applied in cases where the patient cannot be treated with proper surgical instruments	—	—
(i) *Tvaksāra, Sū.* 8, 12; *Śā.* 5, 50	Skin of bamboo	For surgical excisions and incisions where the patient is too young to be surgically operated; for dissection of dead body by means of bamboo grass	—
(ii) *Sphaṭika,* (iii) *Kāca,* (iv) *Kuruvinda, Sū.* 8, 12	—	As above	(ii) Crystal, (iii) Glass, (iv) Ruby
(v) *Jalauka, Sū.* 13	—	For the purpose of bleeding or sucking of vitiated blood where the patient is unfit for surgically operated upon	Leeches

Name, references; variations, if any	Description	Purpose	English equivalent
(vi) *Agni*, *Sū*. 12, 3	For the application of actual cautery for different diseased parts of body, the following articles are recommended: 1. *Pippalī* (*Piper longum*), 2. Goat's dung, 3. Teeth of a cow, 4. *Śara* grass, 5. Probes, 6. *Jambavauṣṭha*, 7. Different kinds of iron, 8. Honey, 9. Treacle, 10. Ghee, 11. Oil	Burning of diseases which are not cured by medicinal and surgical treatment 1-5. For diseases of the skin 6-7. For diseases of the muscles 8-11. For diseases of the vessels, joints, and ligaments	Actual cautery
(vii) *Kṣāra*, *Sū*. 11	—	For excision, incision, and scraping	Alkali
(viii) *Nakha*, *Sū*. 8, 12	—	For excision, incision, or extraction	Nails
(ix-xi) *Patra*, *Sū*. 8, 12; *Ci*. 2, 29; 22, 14	Leaves of plants, like *gojī*, *śephālikā*, *śāka*, and *padma*	Operations in the region of eyelids, or cavity of mouth for the purpose of secreting, or evacuating the accumulated pus or phlegm; for handling the eyeballs and intestines to replace them in their proper position when prolapsed by injury	
(xii) *Karīra*, *Sū*. 8, 11; *Ci*. 1, 49-50	Tender sprouts of corn	For probing or searching; for probing in sinuses on the eyelids and around the anus	
(xiii) *Vāla*, (xiv) *Aṅguli*, *Sū*. 8, 11	Human hair as well as horse's mane	see under *upayantra*	(xiii) Hair, (xiv) Finger

Name, references; variations, if any	Description	Purpose	English equivalent
Darvī, Ci. 6, 6	Wooden made spoon	For the application of potential cautery	Spoon
Dhūmanetra, Ci. 40, 4	Narrow metallic or ivory pipe tapering from about ½" at the end; the length is about 12" to 25" inches, the base and end of the tube is equal in circumference to that of the thumb and little finger respectively. The orifice should allow a common pea to pass through the tube	For introducing medicated fumes	Inhalation or fumigation syringe
Dvimukhanāḍī, Ci. 19, 8; 20, 26 Syn.: *dvidvārānāḍī* and *ubhayatomukhīnāḍī*	Tubular appliance open at both ends	For draining the fluid in ascites and in hydrocele Used as mechanical dilation in urethral and rectal stricture	Any tubular instrument; canula
Gudayantra, Ci. 6, 8-9	A speculum shaped like the feet of cow, made from iron, ivory, horn or wood (about 4" inches long and one inch diameter for males and slightly larger diameter for females), with a ball-like protrusion at the bottom end. The instrument has two apertures, one for seeing and the other for application of cautery	Cauterization inside rectum in piles, fistula, etc.	Rectal speculum
Jambavauṣṭha, Sū. 5, 3	A pencil shaped rod with a serrated knob at one end	Surgical probing	A type of probe

Name, references; variations, if any	Description	Purpose	English equivalent
Kapaṭaśayana, Ci. 3, 39	A plank of wood resembling the panel of a door. The board is furnished with five rods, to which the fractured limb is tied	For setting of fractured, or dislocated bones	Splint
Kaṭāha, Sū. 5, 3	—	Boiling, compounding, or evaporating liquids	Cauldrons
Kuṇṭha, Śā. 8, 54	—	For venesection	Blunt knife
Kūrcca, Śā. 5, 50; *Ci.* 6, 6	Made of grass-roots, or hair, or *kuśa* (grass) blade. or split bamboo	For slowly scraping off the decomposed skin, etc. at the time of dissection of a dead body	Whisk
Mucuṇḍī, Utt. 15, 2	—	For the removal of plerygium after raising it by means of hook	A type of forcep
Mudgara, Sū. 27, 7	—	For loosening an arrow firmly fixed in the bone	Hammer
Phalaka, Sū. 8, 9; *Ci.* 7, 13	Wooden (*śālmalī*) plank, or case used as operation table, or as instrument holder. The length of the table for lithotomic operation, is proportionate to the height of the patient	Examination of the patient before the operation of piles, and also used as operation table in lithotomy For keeping up the instruments to preserve their edges	A type of operation table; instrument holder
Pratuda, Utt. 62, 11	—	For scarifications on the body of a lunatic	A kind of knife
Puṣpanetra, Ci. 7, 15-16	—	For quick expulsion of stones and the accumulated blood in the bladder after operation of calculi	Urethral syringe

Name, references; variations, if any	Description	Purpose	English equivalent
Śaṅku, *Ci*. 15, 7	—	Extraction of the bones of the perforated head of dead foetus	Hook
		Raising up of the filmy growth in eye-operation	
Śastra, *Sū*. 1, 4; 8 Twenty varieties:	Iron made sharp instruments fitted with a handle, provided with edges not jagged, and end in a well-formed points or tops	For surgical excision, incision, scraping, etc.	Cutting instruments
(i) *Maṇḍalāgra*, *Sū*. 8, 2-3; *Ci*. 22,' 23; *Utt*. 15, 2	Sharp circular blades mounted on hands about 4 inches in length including the handles	For excision, scraping or scarifications; especially employed in the operation of enlarged tonsil, in the piercing of the skull of the dead foetus, and in the scraping away of membraneous expansion in the operation of plerygium and other ophthalmic operation	Round headed **knife**
(ii) *Karapatra*, *Sū*. 8, 4, 8	An instrument having the blade in the form of a hand	For surgical cutting and scraping; sawing bones	Flat saw
(iii) *Vṛddhipatra*, *Sū*. 8, 4, 5; *Ci*. 19, 7	A cutting instrument with its edge shaped like the leaf of a medicinal plant, called *vṛddhi*; it is furnished with a handle	For surgical incision and excision; especially used in the removal of scrotal tumour	Razor blade with handles
(iv) *Nakhaśastra*, *Sū*. 8, 2, 5	A cutting instrument with a curved cutting edge shaped like a flat nail parer; the blade is about ½ inch; the total length is 5 inches	For surgical excision and incision	Nail parer

Name, references; variations, if any	Description	Purpose	English equivalent
(v) *Mūdrikā, Sū.* 8, 2-3	A cutting instrument with its blade shaped in an obtuse angle	As in *nakhaśastra*	Finger knife
(vi) *Utpalapatra, Sū.* 8, 2-3	A scalpel with its blade curved in the shape of a lotus-leaf	,,	Phlebotome
(vii) *Ardhadhāra, Sū.* 8, 3	Surgical knife with a straight narrow blade, and fitted with handle; measuring eight *aṅgulis* in length with two *angulis* long and one *aṅguli* wide blade, and six *aṅgulis* long handle	,,	Lancet; scalpel
(viii) *Sūcī, Sū.* 8, 2-3; 15	Steel needles, with or without eyelets of various sizes, diameters and cross-sections; in thickness they are equal to the stalk of the *mālatī* flower	For surgical puncturing and stitching; also for testing tissues and draining morbid fluids	Needles
Three varieties:			
(a) *Vṛttāṅguladvaya*	(a) Straight needle of two *aṅgulis* long	(a) For stitching less fleshy parts and wounds about the joints	
(b) *Tryaṅgula*	(b) Three ribbed needles, three *aṅgulis* in length	(b) For stitching the fleshy parts as the thigh	
(c) *Dhanurvakrā*	(c) Needle curved like a bow	(c) For suturing the wounds of the stomach, instestines, scrotum and vital parts of the body	
(ix) *Kuśapatra, Sū.* 8, 3	An instrument resembling in shape the leaf of a *kuśa* grass six *aṅgulis* long	For drawing off fluids	—

Name, references; variations, if any	Description	Purpose	English equivalent
(x) *Āṭimukha, Sū.* 8, 3	It is described to have the shape like the beak of *āṭi* (*Turdus ginginimus*); six *aṅgulis* long with blade and handle two and seven *aṅgulis* in length respectively	As above	—
(xi) *Śarārimukha, Sū.* 8, 3 Syn.: *kartarī*	A pair of scissors resembling the face of the long beaked bird called *śarāri;* ten *aṅgulis* long	For evacuating abscesses	Scissors
(xii) *Antarmukha, Sū.* 8, 3	Another variety of scissors, with the straight cutting edges within its curved claws	As above	A kind of scissors
(xiii) *Trikūrccaka, Sū.* 8, 3	An instrument consisting of three needles fixed on a round wooden handle; six *aṅgulis* long	For evacuating abscesses and for draining blood from the nasal polyps	Trocar (?)
(xiv) *Kuṭhārikā, Sū.* 8, 2-3	Heavy and tapering cutting implement in the form of an axe with handle and one or two edges	For surgical puncturing	Axe
(xv) *Vrīhimukha, Sū.* 8, 3; *Ci.* 15	An instrument with the sharp end being pointed like a grain of paddy	For paracentesis abdominis in abdominal dropsy; in tapping the hydrocele	A kind of trocar
(xvi) *Ārā, Sū.* 8, 3; *Ci.* 4, 9 Syn.: *pāṇimantha*	A long sharp needle in handle; six *aṅgulis* long	For puncturing in general; for perforation of the bone in diseases of the medullary canal caused by the obstructed and deranged *vāyu*	Awl

Name, references; variations, if any	Description	Purpose	English equivalent
(xvii) *Vetasapatraka, Sū.* 8, 3	A long sharp cutting instrument shaped like the leaf of *vetasa* (rattan)	For puncturing	—
(xviii) *Vaḍiśa, Sū.* 8, 3; *Ci.* 7, 18; 21, 12	A hook-like instrument having sharply edged end, resembling the new leaf of *yava*	For extracting the solid bodies; especially employed for extraction of foreign stone from the urethra; for fixing and dragging the uvula and tonsil before performance of any operation on these parts	Sharp hook
(xix) *Dantaśaṅku, Sū.* 8, 3, 8; *Ci.* 22, 23	An instrument having the end as slightly bent, sharp, and shaped like the fresh leaf of *yava*	Extraction of sordes and tartar from the teeth	Tooth-scaler
(xx) *Eṣaṇī, Sū.* 8, 3, 8; *Ci.* 8, 3; 17, 14	—	For ascertaining the course of the fistulous track, and raising the bridge of skin covering the sinuses	Sharp probe
Two varieties:			
(a) *Gaṇḍupadākāra-mukhī*	(a) The ends shaped like the head of earth-worm	(a) —	
(b) *Sūcīvaktra*	(b) Needle shaped probe	(b) For piercing the tissues through the blind end of the sinus by means of caustic thread passing through the eye of the probe	
Śṛṅgayantra, Sū. 5, 3; 13, 3; *Utt.* 21, 48	Horn vessels or implements	Surgical bleeding; probing into bodily orifices; extraction of an insect, cerumen, blood, etc.	—

Name, references; variations, if any	Description	Purpose	English equivalent
Uttaravasti, Ci. 1, 22, 97; 7, 16; 37, 8 Syn.: *puṣpanetra*	Catheter pipe attached to a squeezable bag, made out of the bladder of a small animal. The pipe is 14 fingers in length in case of male patients and 10 fingers in case of female patients. The forepart resembles the stem of *mālatī* flower. The orifice inside it is just to pass a mustard seed (i.e. 2 mm.), and a *mudga* pulse in case of pipes meant for male and female patients. There are two small bulbs in the middle part of the pipe	As urethral cathetar or vaginal douche for young patients, especially use for quick expulsion of stone and accumulated blood in the bladder after the operation of calculi. It is also necessary in menstrual and seminal disorders	Urethral syringe
Vaṃśavidala, Ci. 27, 6	Bamboo forceps, made of a piece of bamboo rod, split longitudinally into two halves nearly to its whole extents	Extraction of *krimis* (i.e. living germs)	Tongs; forceps
Vastiyantra, Ci. 35-38	It consists of three parts, *vasti* (bag), *netra* (pipe), and *karṇikā* (bulb-like protrusions, attached to the pipe). The bag is made of the bladder of a full grown ox, or a buffalo, or a sheep. In absence of bladder, animal skin properly tanned and disinfected is used for this purpose. The pipe made of either gold, or silver, or copper, or iron or brass, or ivory, or horn, or gems, or woods, is straight, smooth, firm,	For restraining, pacifying and cleansing of the bodily *doṣas;* for building up of an emaciated frame; for invigoration of eyesight; and for rejuvenation, etc.	Rectal clyst

Name, references; variations, if any	Description	Purpose	English equivalent
Vastiyantra (*Contd.*)	and tapering at the top. The mouth of the bladder is tied to the butt end of pipe. The pipe is provided with at least two bulb like protrusions at its end, for the purpose of firmly fastening it to the mouth of the bladder		
Three types: (i) *Nairuhika*	(i) Dry or oilless	(i) For the cleansing of the system	
(ii) *Snaihika*	(ii) Oleaginous	(ii) For increasing the vitality of the organism	
(iii) *Pratipūryamukha*	(iii) Tube open at both ends	(iii) For suction of poison in snake-bite	(iii) Aspiration syringe
Yantra, *Sū*. 7, 2-6 One hundred and one numbers distributed in six groups, namely:	Iron made blunt instruments; the mouth and edges, are sharp and keen, and are provided with a convenient handle	Extraction of any foreign or extraneous substance which finds a lodgment in the human system and becomes painful to the body	Blunt instruments
(i) *Svastikāyantra*, *Sū*. 7, 6	Hinged metal instruments with two blades or halves joined by a small pivot, the handle ends are turned to inwards and the working ends resemble various beasts and birds of prey; length about 10 inches	Extraction of splinters or foreign matter lodged in the body or in a bone Special use — Extraction of foreign matters that are visible to the eye and For easy extraction of foreign matter from the minute parts of human system	Forceps
Twenty-four varieties: (a) *siṃhamukha*	(a) Lion-faced		

Name, references; variations, if any	Description	Purpose	English equivalent
(b) *vayāghramukha*	(b) Tiger-faced		
(c) *vṛkamukha*	(c) Wolf-faced		
(d) *tarakṣumukha*	(d) Hyena-faced		
(e) *ṛkṣamukha*	(e) Bear-faced		
(f) *dvīpimukha*	(f) Panther-faced		
(g) *mārjāramukha*	(g) Cat-faced		
(h) *śṛgālamukha*	(h) Jackal-faced		
(i) *airbārukamukha*	(i) Deer-faced		
(j) *kākamukha*	(j) Crow-faced		
(k) *kaṅkamukha*	(k) Heron-faced		
(l) *kūrmamukha*	(l) Osprey-faced		
(m) *cāṣamukha*	(m) Blue-jay faced		
(n) *bhāsamukha*	(n) Eagle-faced		
(o) *śaśaghātīmukha*	(o) Hawk-faced		
(p) *ulūkamukha*	(p) Owl-faced		
(q) *cillimukha*	(q) Kite-faced		
(r) *gṛdhramukha*	(r) Vulture-faced		
(s) *śyenamukha*	(s) Falcon-faced		
(t) *krauñcamukha*	(t) Curlew-faced		
(u) *bhṛṅgarājamukha*	(u) Fork-tailed or Butcher faced		
(v) *añjalikarṇamukha*	(v-w) Shapes not identified		
(w) *avabhañjanamukha*			
(x) *nandīmukha*	(x) Turdus-faced		
(ii) *Sandaṃśayantra, Sū.* 7, 7	Pincher-type instruments of iron or other hard metals about 9 inches in length	Extraction of splinters, etc. from below the skin, flesh or deep-seated tissues	Surgical pincher
(a) *Sanigraha*	(a) Pincher in which the tongs are soldered together with a bolt		
(b) *Anigraha*	(b) Pincher soldered together without bolt		

Name, references; variations, if any	Description	Purpose	English equivalent
Yantra (Contd.) (iii) *Tālayantra*, *Sū.* 7, 8 Two varieties: (a) *Ekatāla*	Curved blades with handles, either single or double blades; 7 inches in length (a) Single blades are shaped like fish scales	Extraction of splinters, and growths from inside the nose, ears and other bodily orifices	Picklock like instrument
(b) *Dvitāla*	(b) Double blades resemble the mouth of a fish		
(iv) *Nāḍīyantra*, *Sū.* 7. 9; 16, 24; *Ci.* 14, 22; 20, 26; *Utt.* 23, 9 Eleven varieties according to their uses in different diseases, like fistula, piles, tumours and ulcers, hydrocele, phimosis, stricture of the rectum, ascites; injecting anything into the urethra, the bowels, the vagina and the uterus, medicated inhalation, and as cupping instrument (*alāvuyantra*)	Metal tubes with inner passages of various designs open on one or both ends. The length and circumference of the tubes is indicated by the size of the passage inside which it is to be used	For inspecting the seat of affection in deep-seated piles, fistulas; for suction of morbid fluids; for relieving phimosis; for blowing powder into the running nose; for the support of the nasal cavities in Rhino-plastic operation, in the fracture of nasal bones, for draining the fluid after the abdomen has been tapped in ascites, for removing the urethral and rectal strictures	Tubular instrument
(v) *Śalākayantra*, *Sū.* 7, 10; 11, 12 Twenty-nine different types distributed in twelve main varieties:	Metallic probes or bougies made in various lengths and diameters for specific purposes. The working ends are bent down and end in pea-sized heads resembling earth-worm, serpent hoods, fish hooks, spoons, fruits and flowers of different types, mace, spear, etc. a spoon-shaped probe	For searching and probing suppuration, etc.; uplifting or moving affected tissues; also used covered with cotton or lint for cleansing pus and application of alkaline fluids or opening a passage in a blocked urethra; for the application of potential cauteries	Surgical probes or directions

Name, references; variations, if any	Description	Purpose	English equivalent
(a) *Gaṇḍupadamukha* (Two types)	(a) Earth-worm like	(a-d) For searching pus in a suppurated part, extracting a *śalya*, transferring such a body from one place to another, etc.	
(b) *Śarapuṅkhāmukha* (Two types)	(b) Arrow-stem like		
(c) *Sarpaphaṇamukha* (Two types)	(c) Snake's hood like		
(d) *Vaḍiśamukha* (Two types)	(d) Fish-hook like		
(e) *Masūradālamukha* (Two types)	(e) Lentil-pulse like	(e) For withdrawing a foreign matter imbedded in any outer canal of the body	
(f) *Pramarjana* (Six types)	(f) Swabs	(f) For cleansing the pus from affected part	
(g) *Khallamukha* (Three types)	(g) Spoons	(g) For applying alkaline medicines	
(h) *Jāmbavadana* (Three types)	(h) *Jāmbul* seed like	(h-i) For cauterization	
(i) *Aṅkuśavadana* (Three types)	(i) Goad like		
(j) *Kolāsthidalamukha* (One type)	(j) Plum seed like	(j) For removing nasal tumours	
(k) *Mukulāgra* (One type)	(k) Bud shaped	(k) For applying medicated collyrium	
(l) *Mālatīpuṣpavṛntāgra* (One type)	(l) Stem of *mālatī* flower	(l) For cleansing the urethra	
(vi) *Upayantra, Sū. 7, 11* Twenty-five different types:	They are not the instruments proper, but act as surgical aid	Surgical	Accessory appliances

Name, references; variations, if any	Description	Purpose	English equivalent
Yantra (*Contd.*)			
(a) *Rajju, Ci.* 17, 16	Cords and ropes made of vegetable fibres	(a) Threads smeared with caustics are recommended for the operation of fistula	Thread
(b) *Veṇika, Ka.* 5, 2		(b) Used as ligature for arresting the circulation of blood towards the heart after snake-bite	Twine
(c) *Paṭṭa, Sū.* 18, 13		(c) Act as soft stuffing between the medicine and the bandage	Tow
(d) *Carma, Śā.* 8, 5, 7; *Ci.* 20, 31; *Ka.* 5, 2		(d) Used as bandages, ligatures, lithotomy-strap, shackle, abdominal binder, *śiro-vasti* (leather bag containing oil or other liquids for applying over head), and as band	Leather
(e) *Antarvalkala, Sū.* 18, 10; *Ci.* 3, 5; *Utt.* 5, 2	Inner barks of trees	(e) Used as splints for the support of fractured and dislocated bones; as a ligature for arresting the circulation of blood towards the heart after snake-bite	
(f) *Latā, Sū.* 18, 10	Tendrils of creepers	(f) Used as ligatures	
(g) *Vastra, Sū.* 18, 10		(g) As a material for bandages	Cloth
(h) *Asṭhīlāśma, Sū.* 28, 7		(h) For the purpose of loosening an arrow embedded in bone	Stones or pebbles

Name, references; variations, if any	Description	Purpose	English equivalent
(i) *Mudgara*, *Sū*. 28, 7		(i) As above	Hammer
(j) *Pāṇipādatala*, *Sū*. 27, 5, 8; 28, 6		(j) For the purposes of pressing and rubbing a hard and slightly painful swelling; for striking a blow with the fist on the shoulder in cases when a morsel of food sticks in the throat; for pressing of the part of the body by foot where foreign body has been embedded deeply	Palm of the hand and sole of foot
(k) *Jihvā*, *Sū*. 7, 11		(k-l) —	Tongue, Tooth
(l) *Danta*, *Sū*. 7, 11			
(m) *Nakha*, *Sū*. 8, 13		(m) For the purpose of cutting, piercing, and extraction	Nail
(n) *Mukha*, *Sū*. 27, 3; *Ci*. 4, 9		(n) Used as a suction apparatus	Mouth
(o) *Vāla*, *Sū*. 25, 11; 27, 8; *Ci*. 2, 51		(o) Used as plug-stick for the extraction of *śalya* from the brain and fish bones from the throat, and as a suture material	Hair
(p) *Aśvakaṭaka*, *Sū*. 27, 6	The ring of a horse's bridle	(p) For the extraction of arrow firmly fixed in the bones	—

Name, references; variations, if any	Description	Purpose	English equivalent
(q) *Śākhā, Sū.* 7, 11	Branch of a tree	(q) As in *aśvakaṭaka*	—
(r) *Ṣṭhīvana, Sū.* 7, 11	—	(r) —	Spittle
(s) *Pravāhana, Sū.* 27, 2, 3	Fluxing the patient	(s) For the purpose of emesis, purgation, and lachrymal secretion of foreign body	—
(t) *Harṣa, Sū.* 27, 2, 3	Object of exciting happiness	(t) For driving away the shaft of grief	—
(u) *Ayaskānta, Sū.* 27, 2	—	(u) For extraction of an arrow from the wound	Load-stone
(v) *Kṣāra, Sū.* 11 Three types: *mṛdu, madhya,* and *tīkṣṇa*	Mild, middle and sharp cauteries	(v) For the purpose of incisions and scarifications	Caustics or potential cautery
(w) *Agni, Sū.* 7, 11		(see under *anuśastra*)	Actual cautery
(x) *Bheṣaja, Sū.* 7, 11			Medicines
Yavavakra, Utt. 17, 35	A type of needle with *yava*-shaped end	Operation of the white filmy growth of eye	A type of needle

TABLE XI

Weights, Measures, Subdivisions of Time

A. *Weights and Measures*

Name, references; synonyms, if any	English equivalent
Āḍhaka, Ci. 39, 3	A weight equalling 64 *palas*, i.e. about 6 kg.
Akṣa, Ci. 5, 39; 7, 10	A weight equal to 2 *tolās*, i.e. about 23 gms.
Aṅguli, Sū. 7, 7-8	A measure of length equal to a finger's breadth, i.e. about 1.8 cm.
Añjali, Sū. 11, 7	A measure of weight equalling 32 *tolās*, i.e. about 370 gms.
Aratni, Śā. 8, 7	A cubic of middle length, from the elbow to the tip of the first finger
Dhāraṇa, Ci. 22, 44	An apothecaries' weight equalling one half *tolās* (about 18 gms.)
Droṇa, Sū. 11, 7	A liquid measure equalling 128 *palas*, i.e. about 12 litres (in later practice, *droṇa* is equal to 16 seers, i.e. weight of 15 litres of water app.)
Hasta, Sū. 2, 3	A cubit; about 18 inches
Karṣa, Ci. 14, 13	A measure of weight, equal to 2 *tolās*
Kuḍava, Sū. 11, 8; *Ci.* 10, 6	A measure of weight and volume equalling 4 *palas*, i.e. about 370 gms. or 370 cc.
Muṣṭi, Ci.. 29, 7	A measure of weight, equal to 1 *pala*
Pala, Sū. 11, 8	A weight known to be equal to 8 *tolās* of modern goldsmiths, i.e. about 93 gms.
Pātra, Ci. 14, 9; 23, 14	A liquid measure equalling about 7 litres
Prakuñca, Ci. 10, 13	A measure of weight equal to 1 *pala*
Prasṛta, Ci.. 35, 4	A liquid measure equal to 2 *palas* (used in medicinal dosage, the quantity being regulated by the hollow of the patient's own hand)

Name, references; synonyms, if any	English equivalent
Prastha, *Sū*. 8, 24; *Ci*. 10, 15; 39, 3	A weight equalling 16 *palas*, i.e. about 1.5 kg.; but in the apothecaries' measure current in Suśruta's text it measured 13½ *palas* only
Śāṇa, *Sū*. 44, 36	A weight equal to 1½ *tolās*, i.e. 17.5 gms.
Śukti, *Sū*. 11, 8; *Ci*. 10, 13	A weight equal to ½ *pala* (i.e. 4 *tolās*)
Tulā, *Ci*. 6, 14; 10, 16	A weight equalling 100 *tolās*, i.e. 11.66 kg.
Vilva, *Utt*. 18, 19	A liquid measure said to be the volume of a *pala* of water, i.e. about 93 cc.

Measures of drug

Ci. 31, 11

Name	Value according to Suśruta
Dhānyamāṣa	A particular weight, equal to 16 *sarṣapas*
Suvarṇamāṣa	A weight equal to 12 *dhānyamāṣas* (= 180 grains troy)
Suvarṇa	A weight equal to 16 *suvarṇamāṣas*
Dhāraṇa	A weight equal to 19 *niṣpāvas* (= 18 gms.)
Karṣa	A weight equal to 3 *dhāraṇas* (= 176 or 280 grains troy)
Kuḍava	A weight equal to 4 *karṣas*
Prastha	A weight equal to 4 *kuḍavas*
Āḍhaka	A weight equal to 4 *prasthas*
Droṇa	A weight equal to 4 *āḍhakas*
Tulā	A weight equal to 100 *palas*
Bhāra	A weight equal to 20 *tulās*

B. *Subdivisions of Time*

Sū. 6

Name, references; synonyms, if any	English equivalent
Ahorātra, Sū. 6, 4	Solar day ; sunrise to next sunrise
Akṣinimeṣa, Sū. 6, 4	The smallest subdivision of time, required to pronounce a single syllable
Ayana, Sū. 6, 6	Solstice (two in number, each lasting six months)
Kalā, Sū. 6, 4; 14, 12	A subdivision of time, approximately equal to 2½ minutes
Kāṣṭhā, Sū. 6, 4	Thirtieth part of a *muhūrta ;* i.e. 1/900th part of a solar day ; about one and half-minutes
Māsa, Sū. 6, 4	Month (solar) ; twelve in number make a solar year
Muhūrta, Sū. 6, 4	Thirtieth part of a solar day
Pakṣa, Sū. 6, 4	Lunation ; fortnight
Ṛtu, Sū. 6, 5	A season (six in number, each lasting two months)
Saṃvatsara, Sū. 6, 3	Solar year
Yuga, Sū. 6, 9	Five solar years

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III. COMMENTARIES

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4. Ḍallaṇāchārya's *Nibandhasaṃgraha* (c. 12th cent. A.D.)
   Ḍallaṇācārya in his *Nibandhasaṃgraha* enumerates the notes and annotation on *Suśruta Saṃhitā*[5] by:
   (i) Commentary (*ṭīkā*) of Jaijjaṭa.
   (ii, iii) Annotations (*pañjikā*) of Gayadāsa and Bhāskara.
   (iv, v) Glossaries (*ṭippaṇī*) by Mādhava and Brahmadeva.
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[1] Hoernle, A. F. Rudolf, "Ancient Indian Medicine" *Journal Royal Asiatic Society (Great Britain and Ireland)* 1905, p. 292.
[2] Mukhopadhyaya, G. N. *Surgical Instruments of the Hindus*. I. p. 17.
[3] *Ibid*; Hoernle, *op. cit.*
[4] Hoernle, A. F. R. *Studies in the Medicine of Ancient India*. Pt. I. Oxford. 1907. p. 69.
[5] *Nibandhasaṃgraha*, Ed. by Jivananda Vidyasagara, p. 1.

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5. Ubhalta[1] (Kashmir).
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IV. TRANSLATIONS

Arabic[2] — (before the end of the 8th cent. A.D. "Kitab — Shawshoon-al-Hindi', "Kitab-i-Susrud" or Book Suśruta by Ibn Abillasaibal.

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(2) Translation by A. Chattopadhyaya, 1891.

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[1] G. N. Mukherjee, *op. cit.,* p. 17.

[2] *Ibid.,* pp. 17-18.

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Suśruta Samhitā, the Ayurvedic classic of Dhanvantari school though basically a study of surgical treatment, concerns in addition, origin of life, analysis of constituent elements of vegetable and animal substances taken as food as well as drugs, and theories and practices relating to origin of human diseases and their treatment.

The present monograph is an evaluation of the *Suśruta Samhitā* in two parts: text and tables. Theories and practices mentioned in the original text have been analysed in the first part, tables contain relevant informations in details.